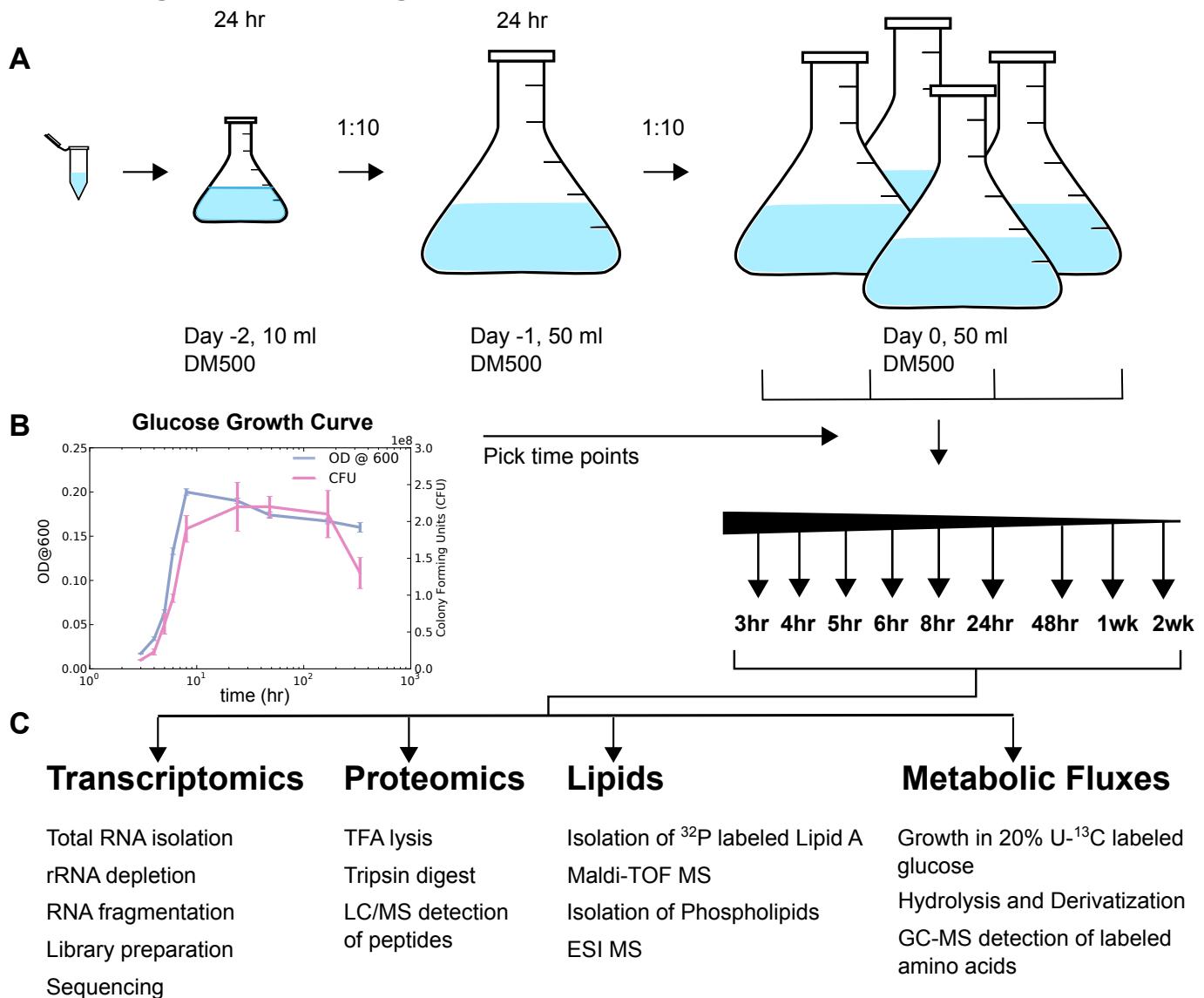
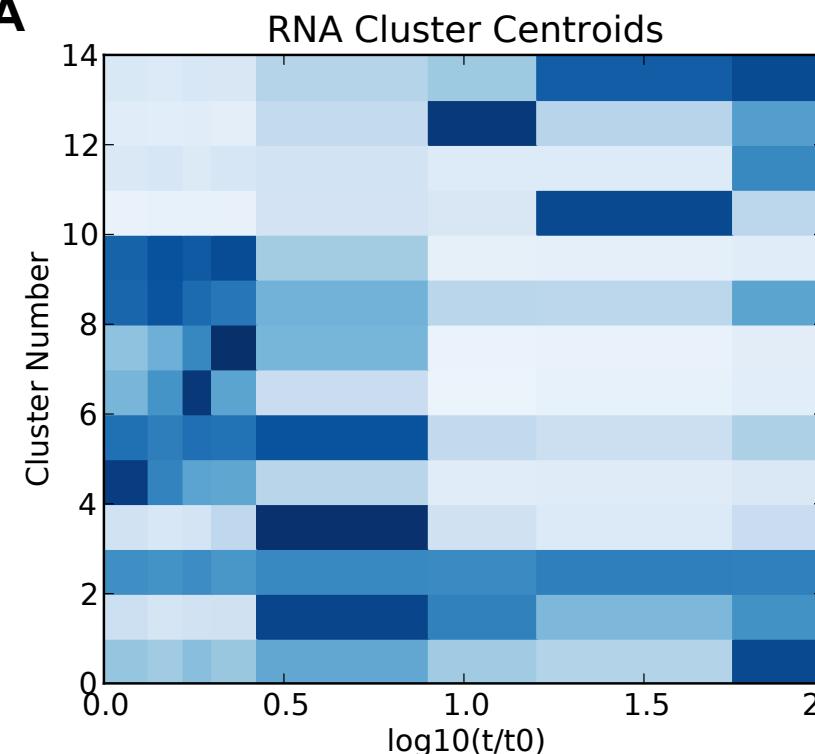
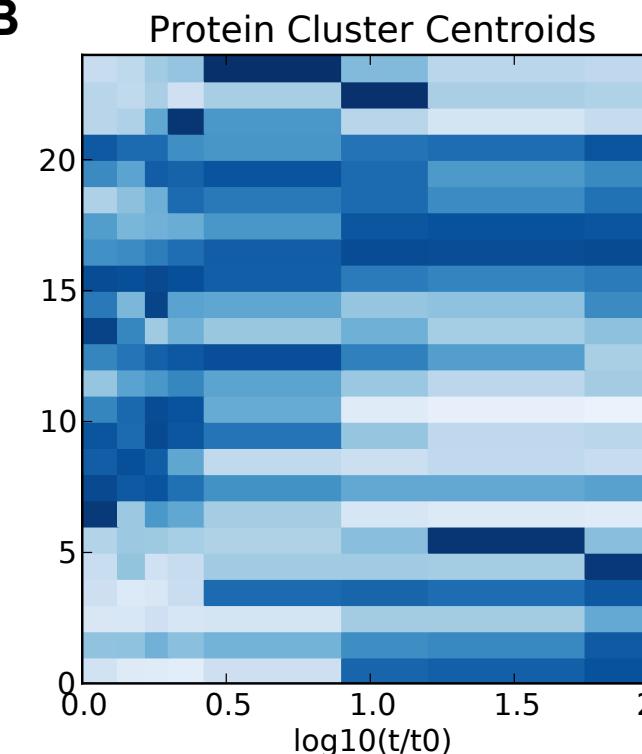
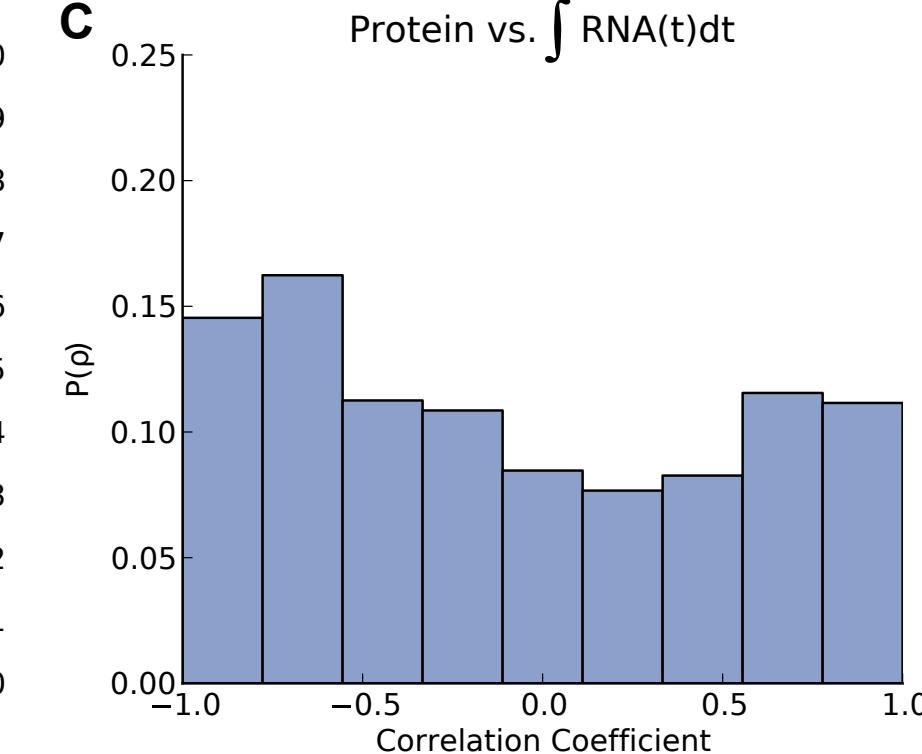
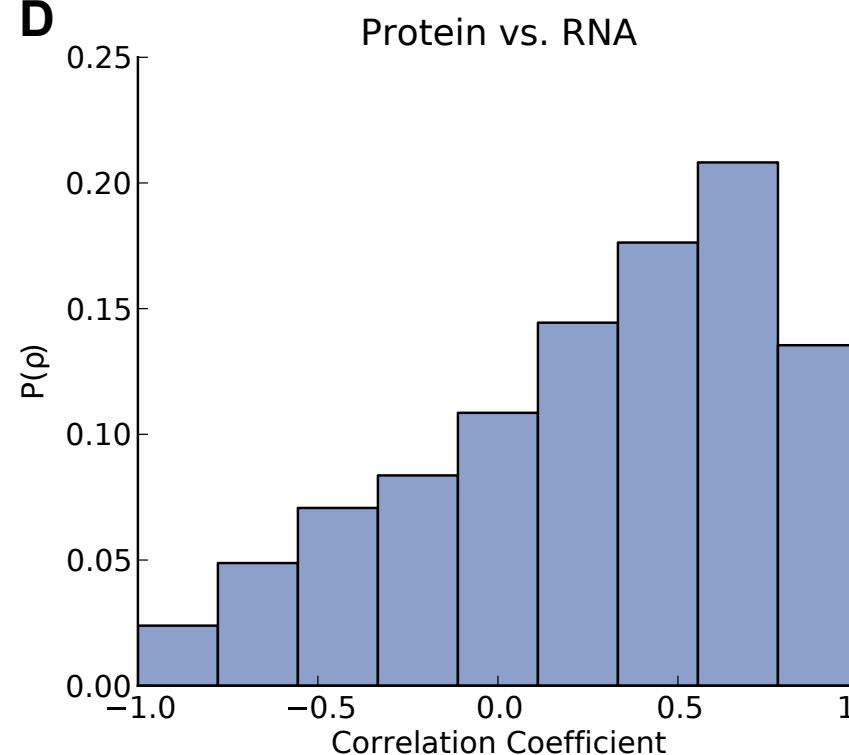
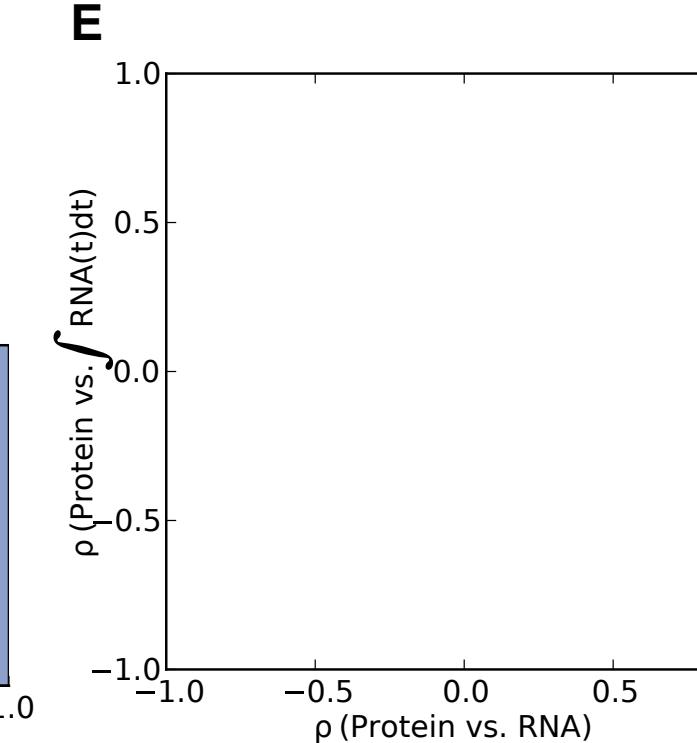
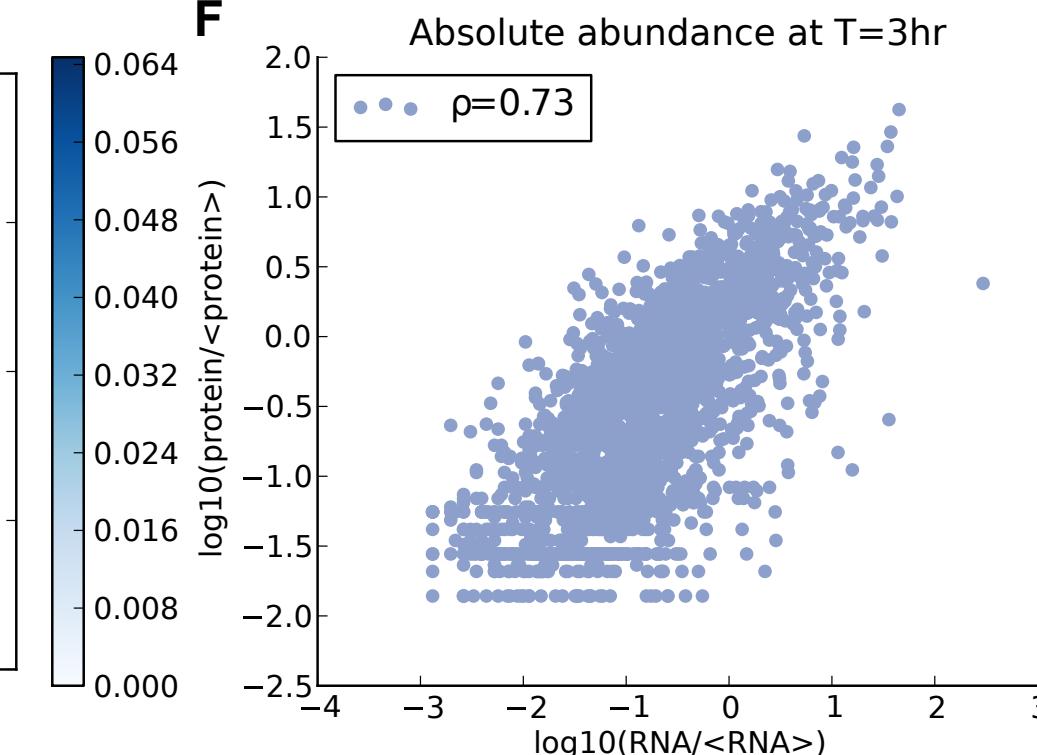


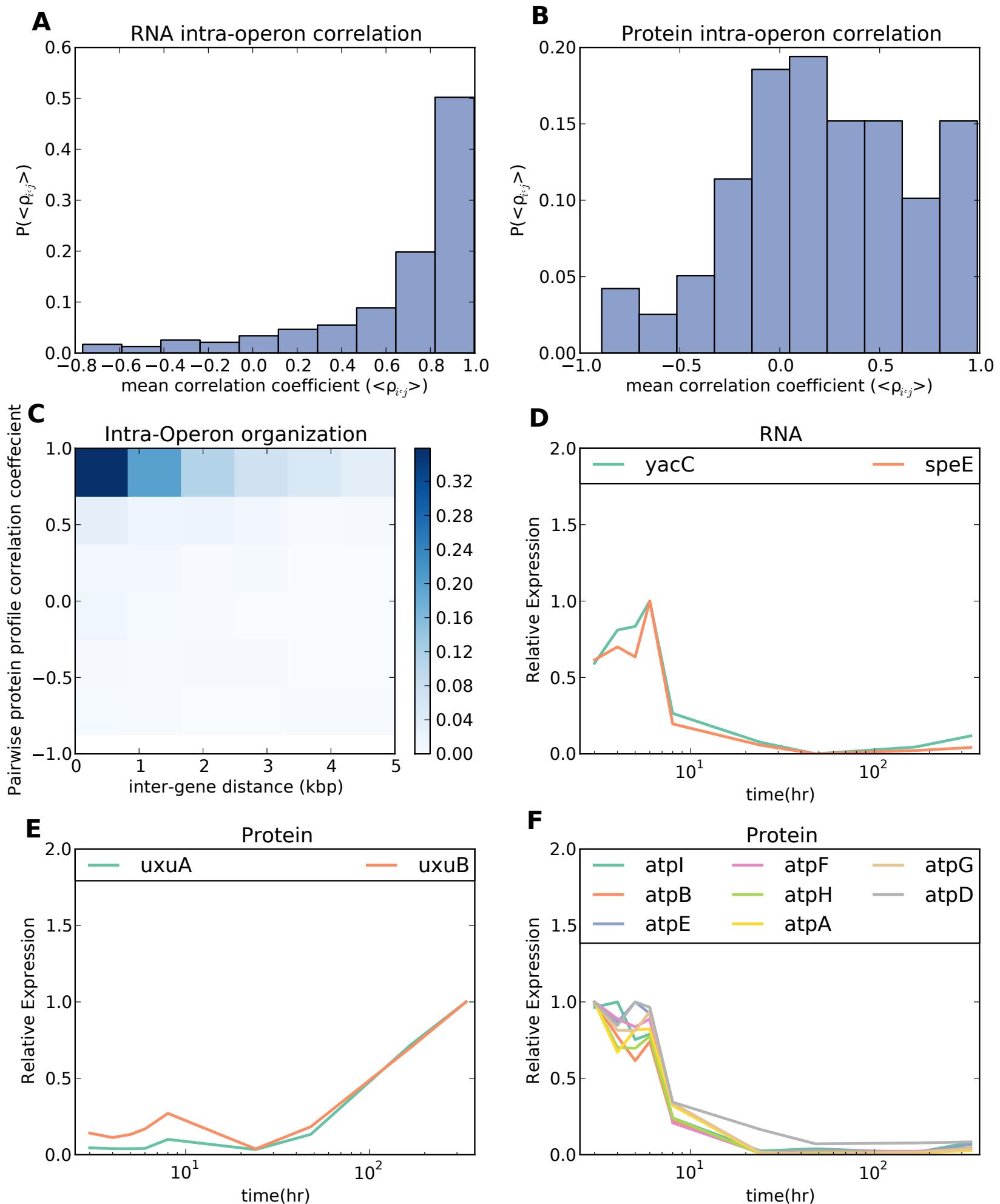
# Figure 1

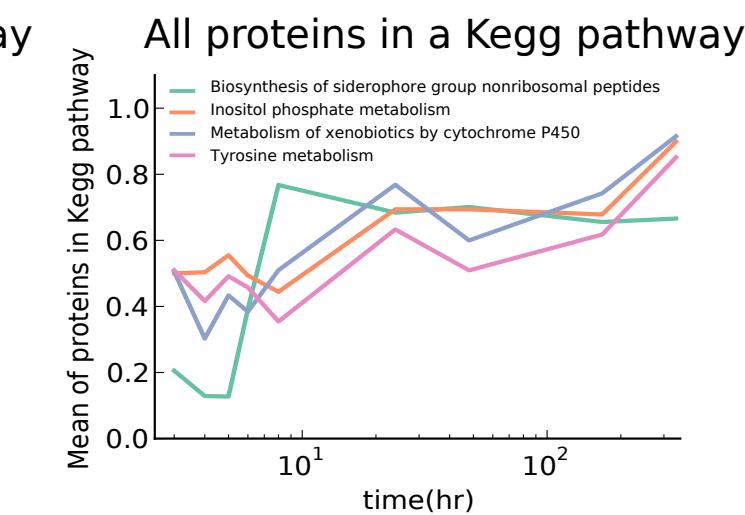
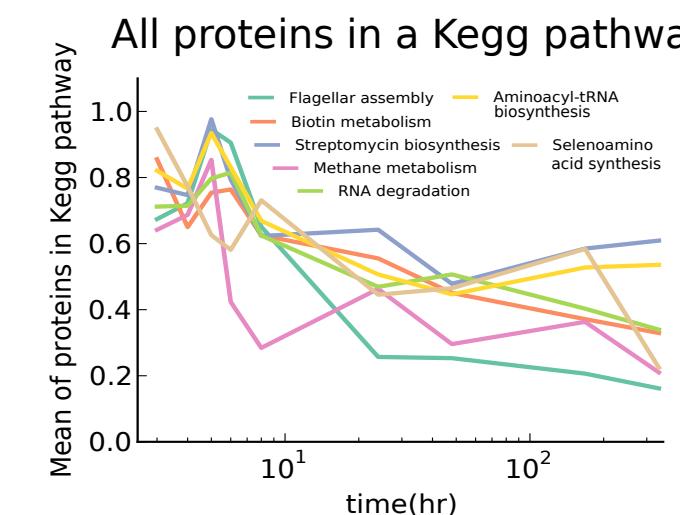
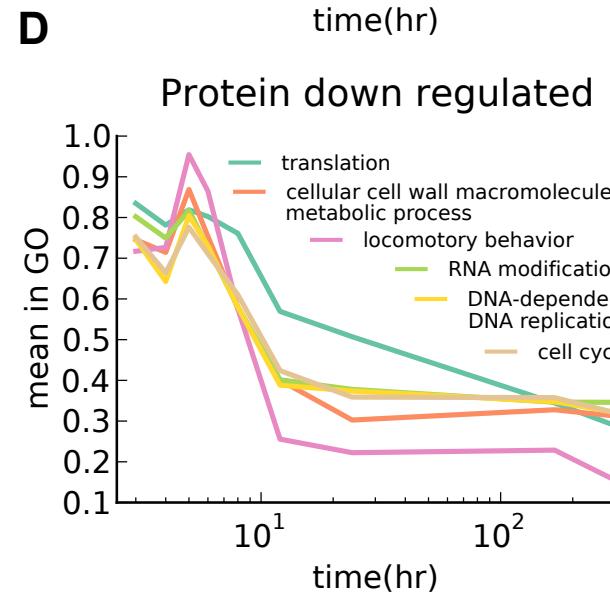
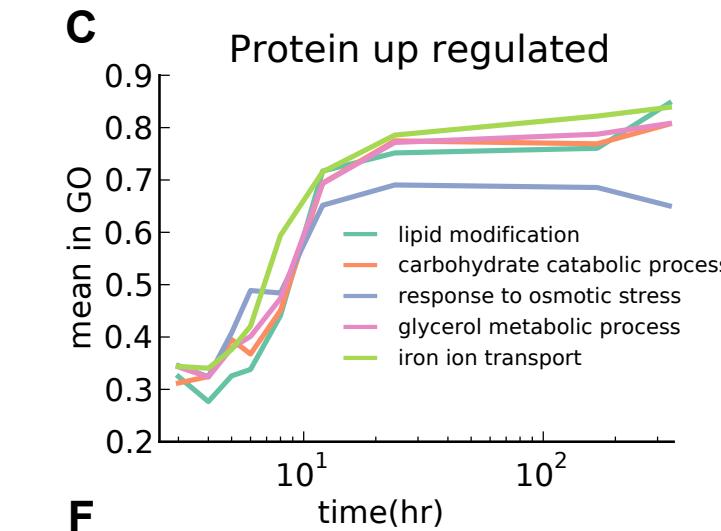
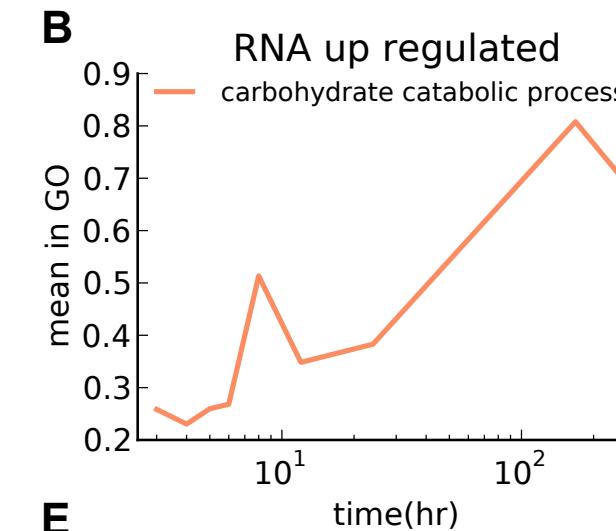
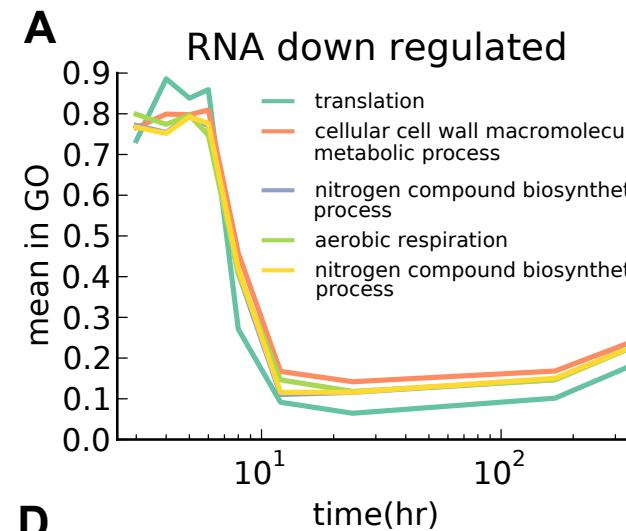
## Glucose growth and long-term starvation and multiplexed data aquistion



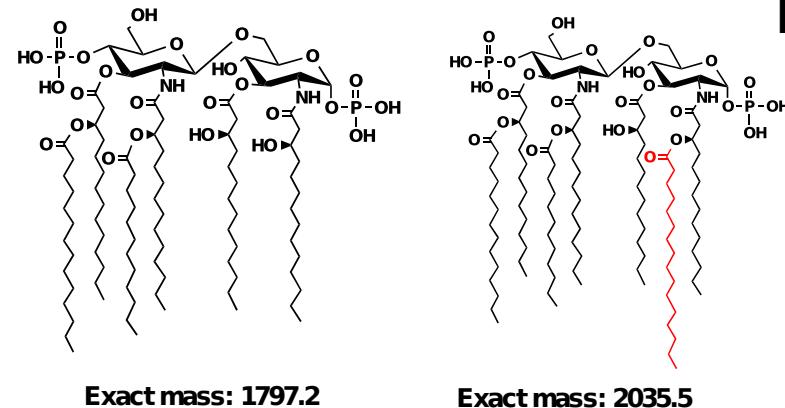
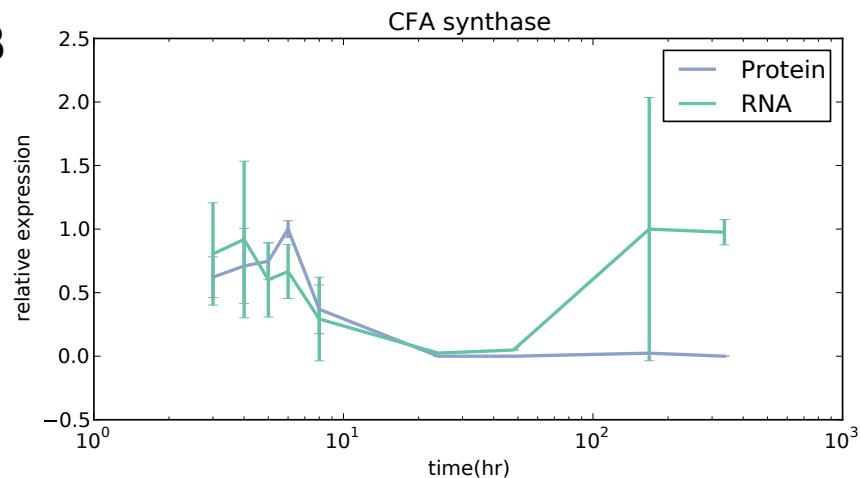
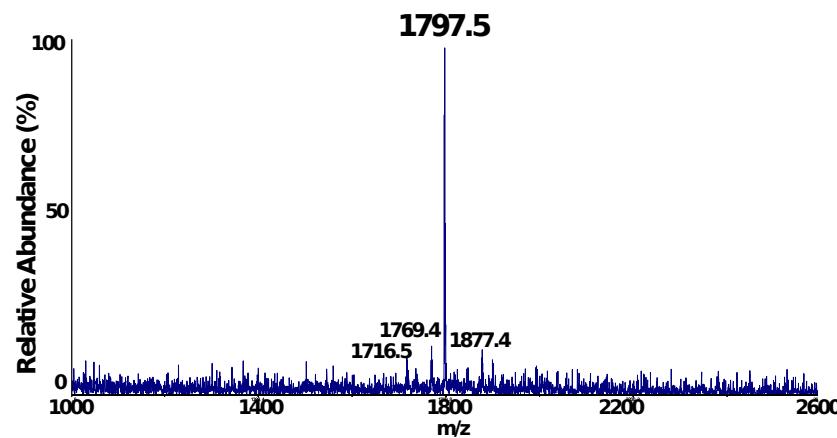
**Figure 2****A****B****C****D****E****F**

## Figure 3

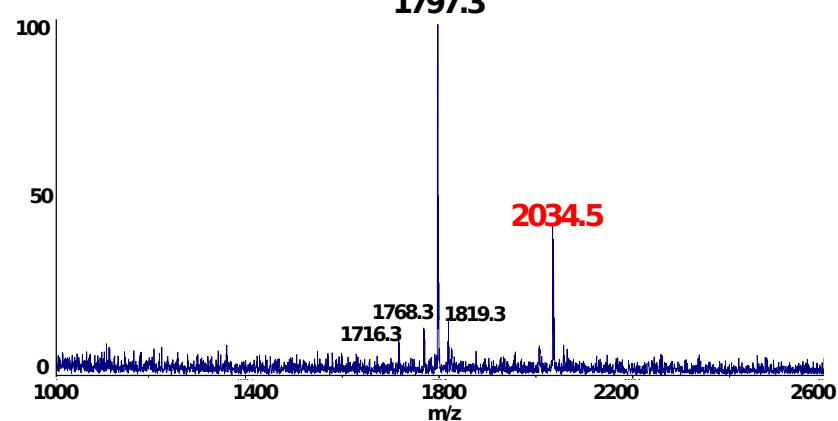
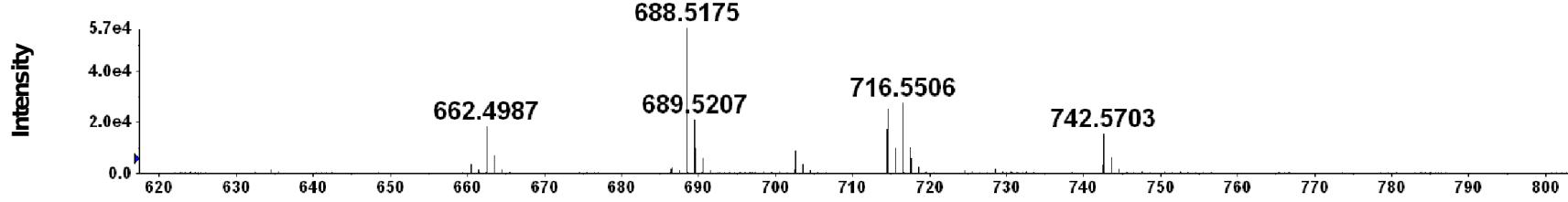
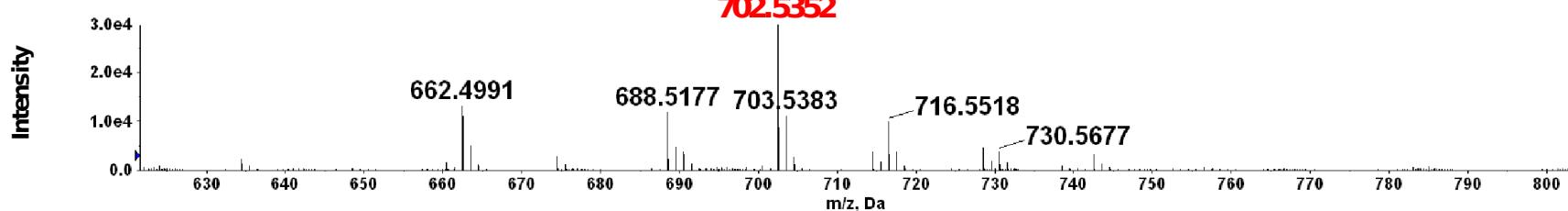


**Figure 4**

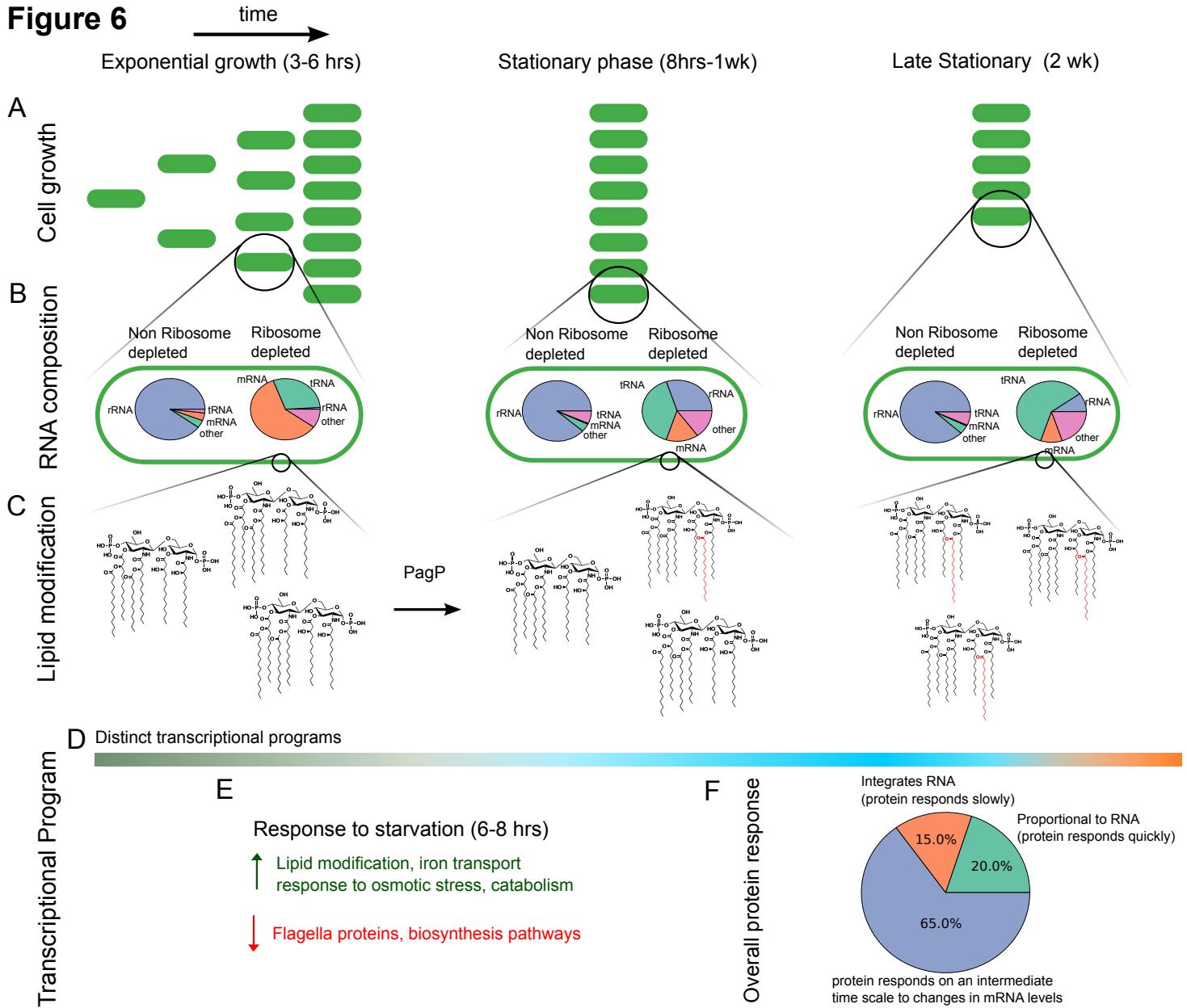
# Figure 5

**A****B****C**

2 weeks

**D 6 hours****2 weeks**

**Figure 6**

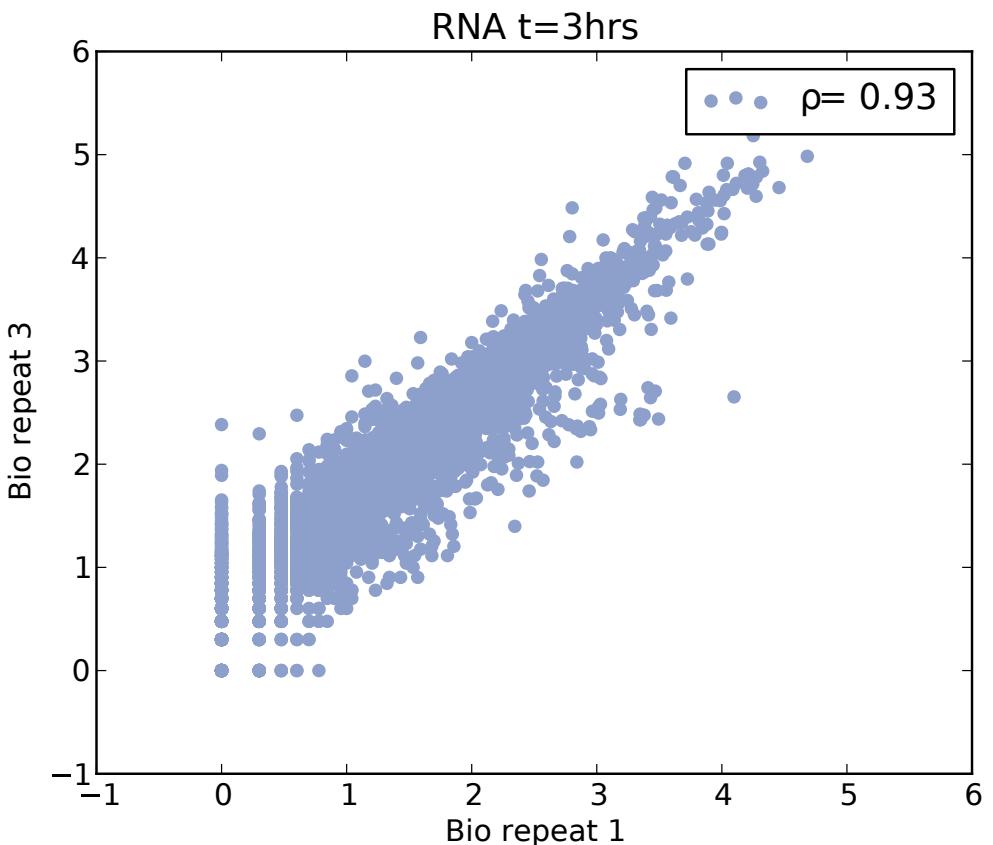
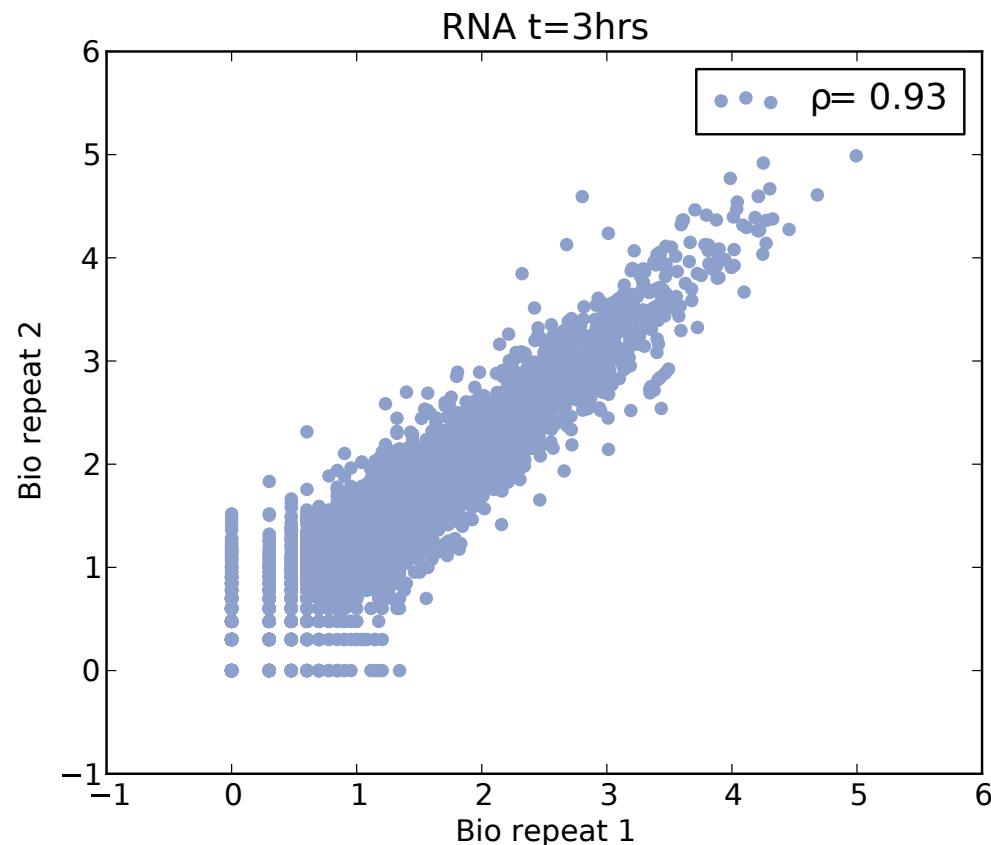
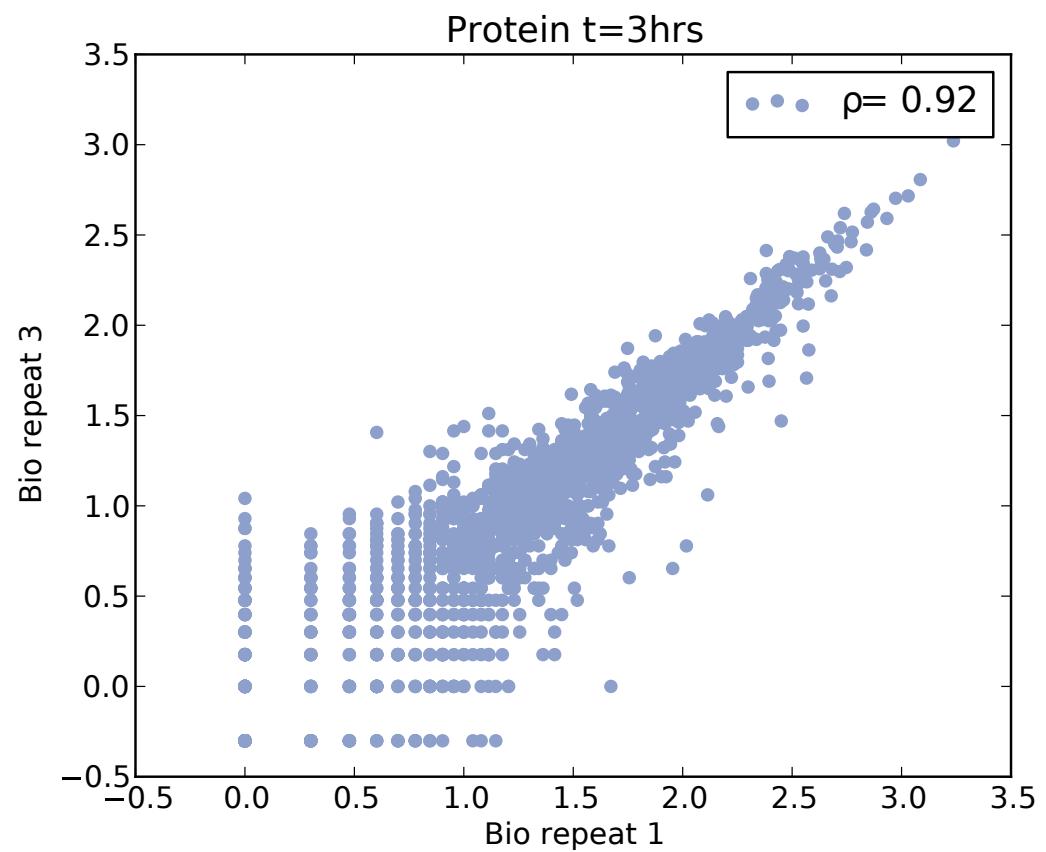
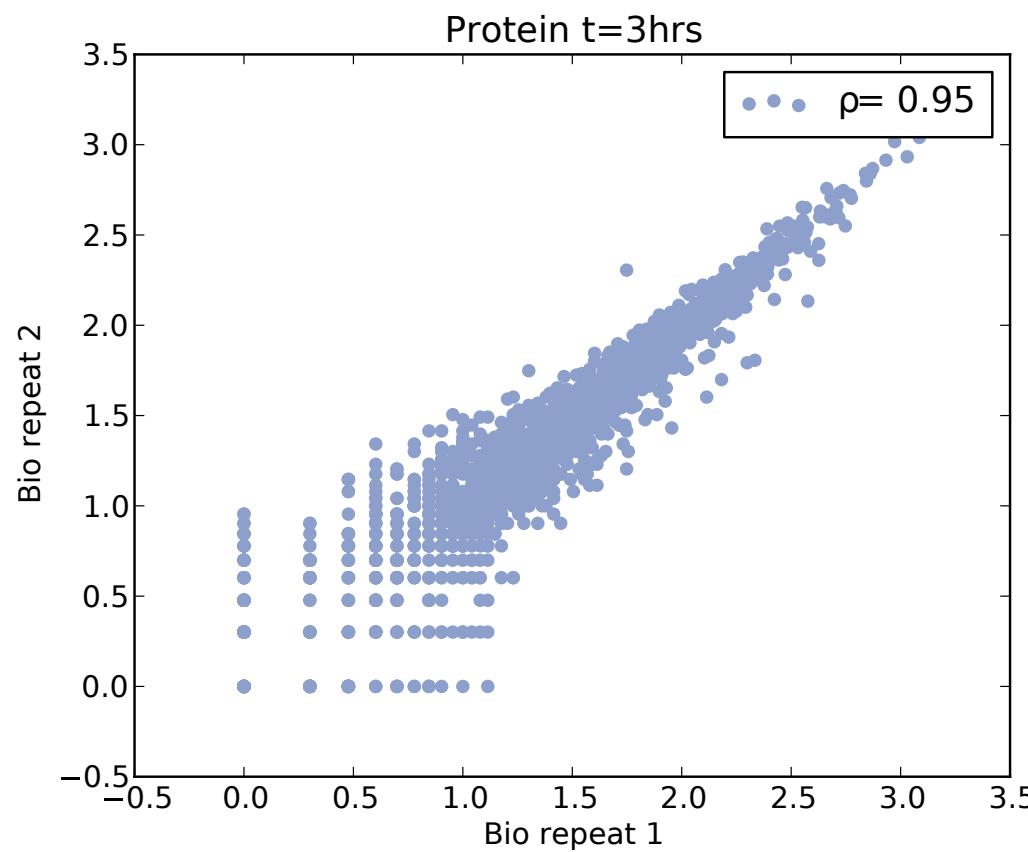


**Table 1**

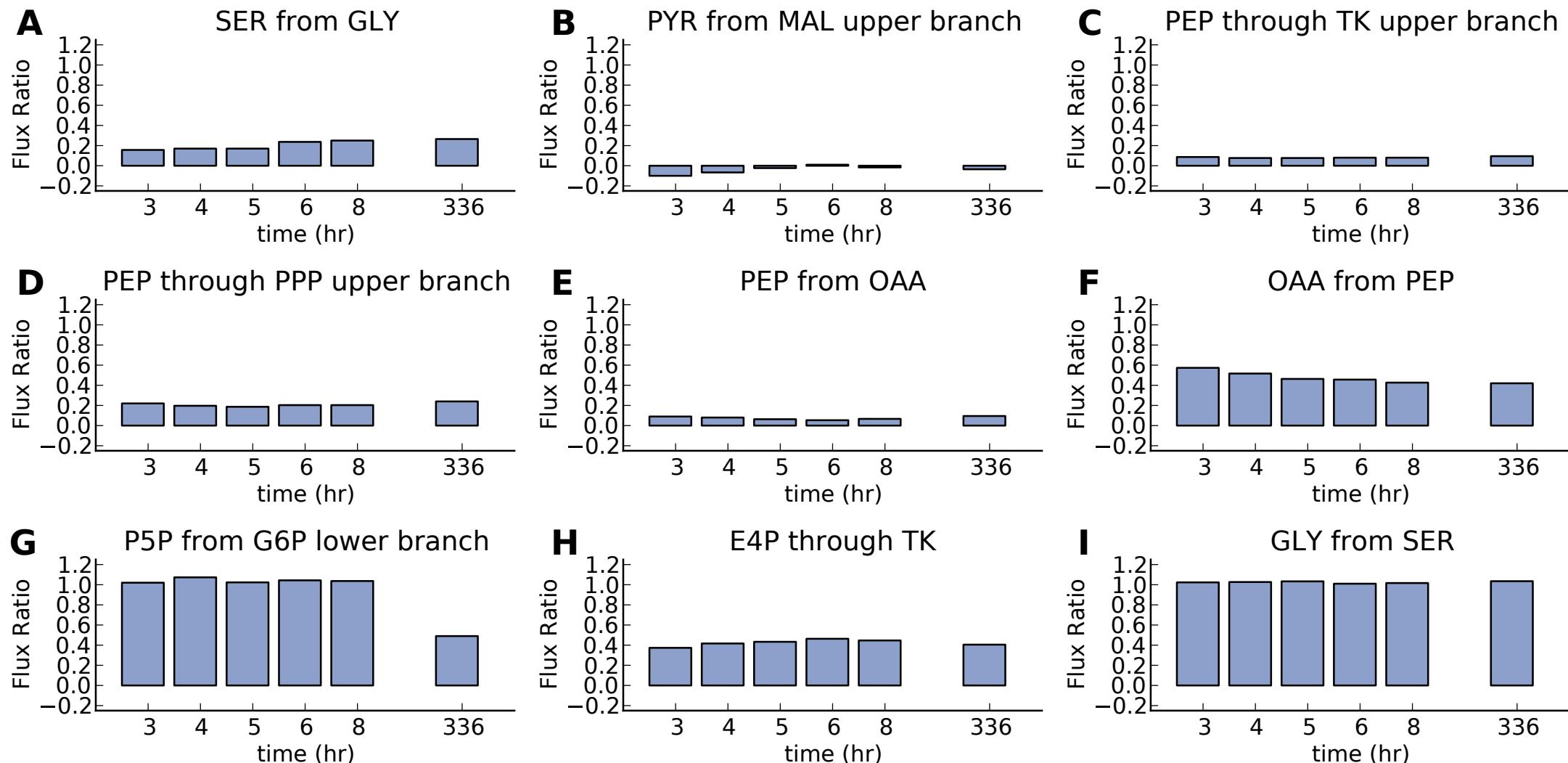
Publication	N proteins found	Cutoff	Method	#RNAs	Cutoff	Method
This study	2648 *(at 3hrs)	FDR<1%	Shotgun MS	4116 genes, 89 sRNA, 85 tRNA (at 3hrs)	?	RNA-seq
Yoon et al. 2012	60	fold change>2	2-D gel	4144 gene probes (REL606 strain)	NA	Microarray
Taniguchi et al.i 2012	1018	NA	YFP fusion	137	95% confidence	FISH
Lewis et al. 2010	~1,000	P-value<0.05	Shotgun MS			
Lewis et al. 2009				4428 gene probes	NA	Microarray
Soares et al. 2013	2053*	FDR<1%	SILAC			
Wisniewski and Rakus, 2014	2200	FDR<1%	FASP			
Raghavan et al. 2011				Genes: 4161, 133 sRNA	%region mapped ≥50%	RNA-seq

\*The criteria that Soares et al. use for a protein being observed is that it appear in at least 1 of 2 biological repeats. We use a criteria that it appear in 1 of 3 biological repeats.

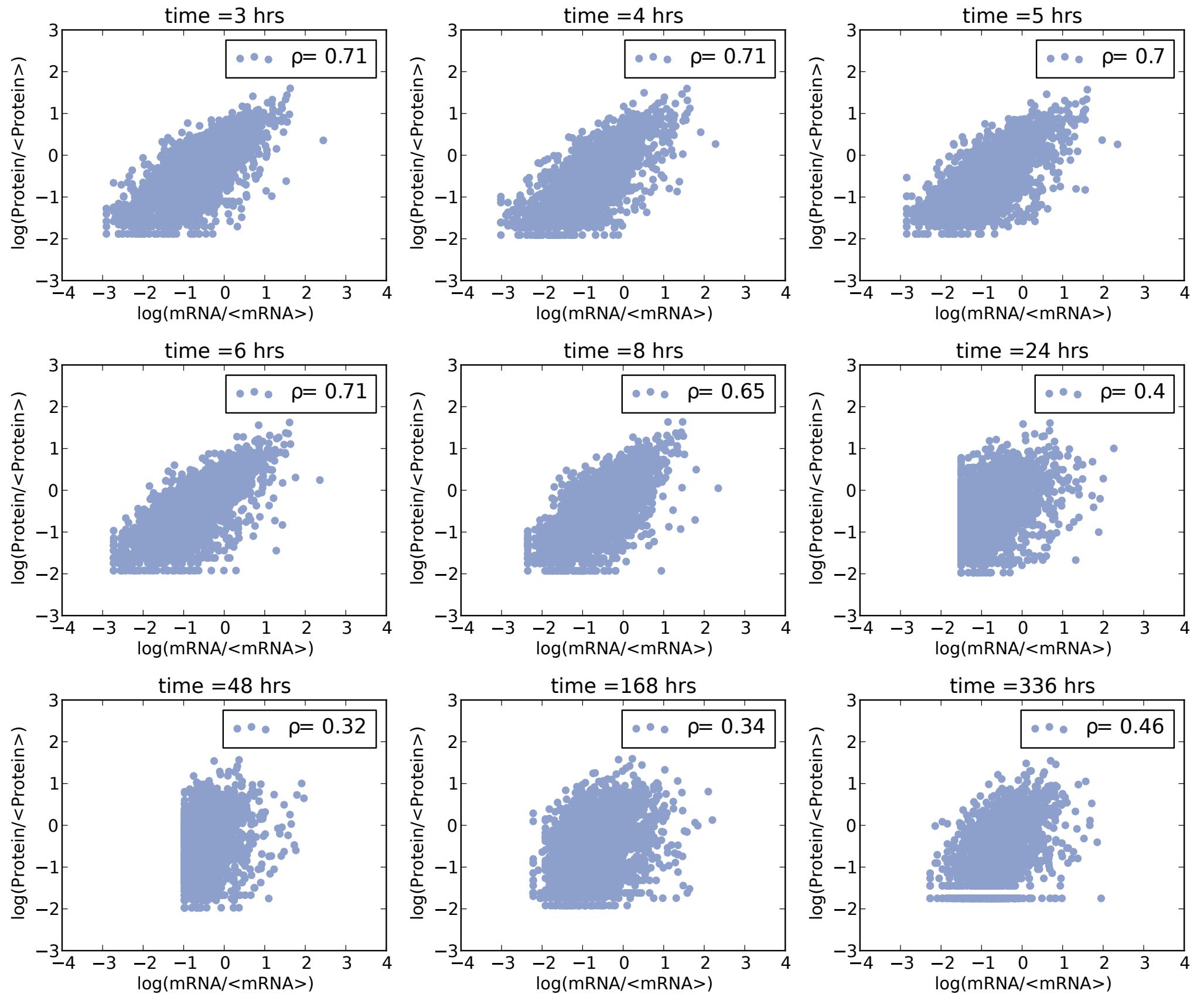
# Figure 1- supplemental figure 1



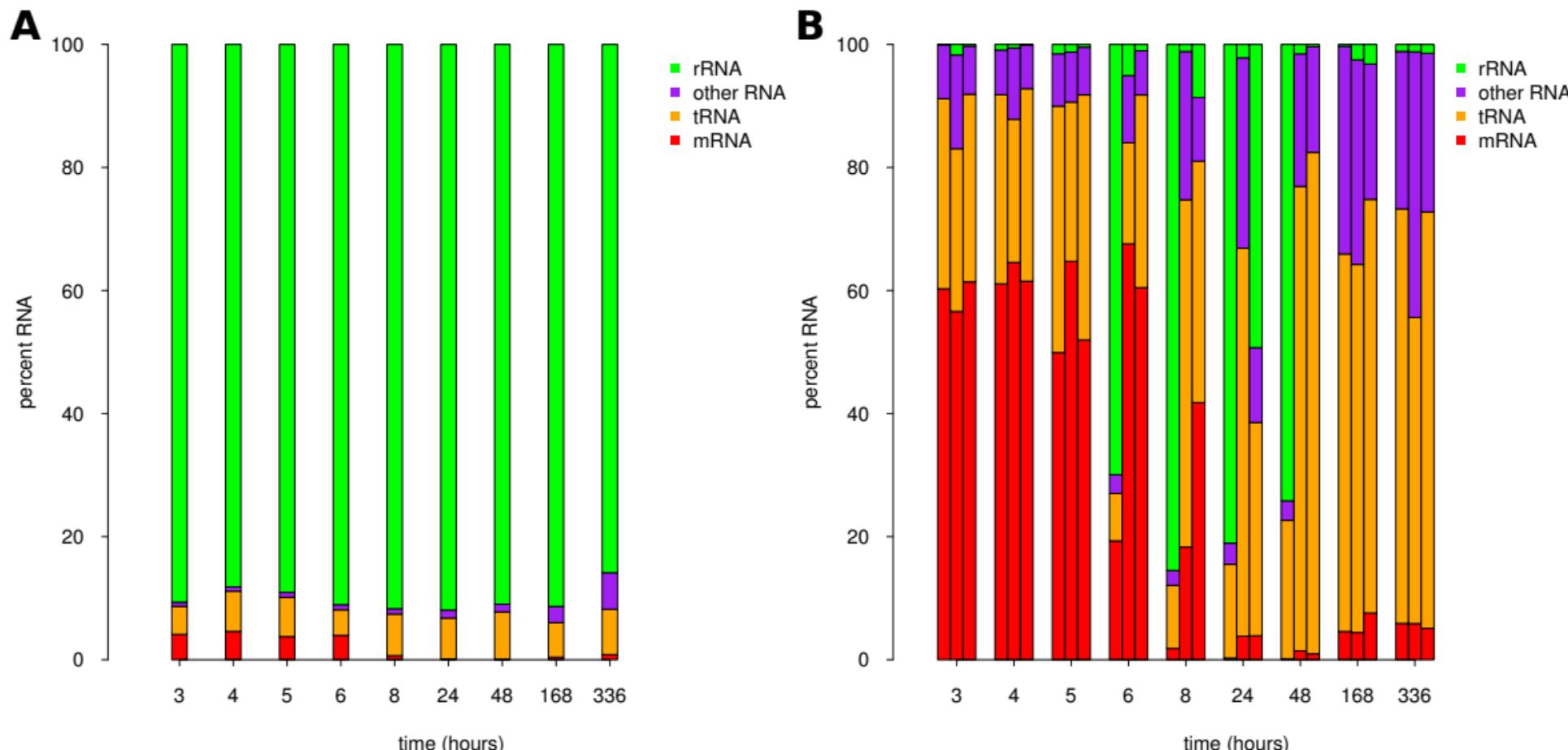
**Figure 1 - supplemental figure 2**



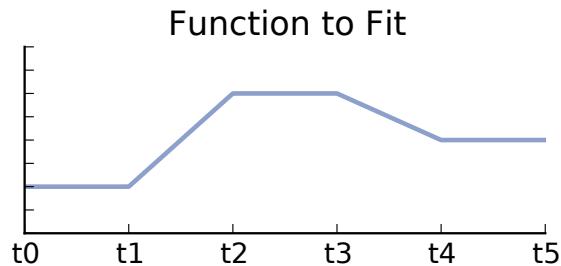
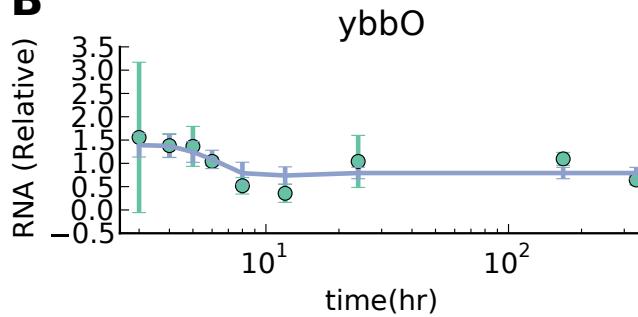
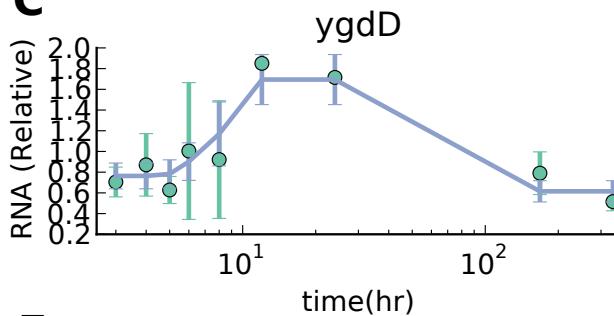
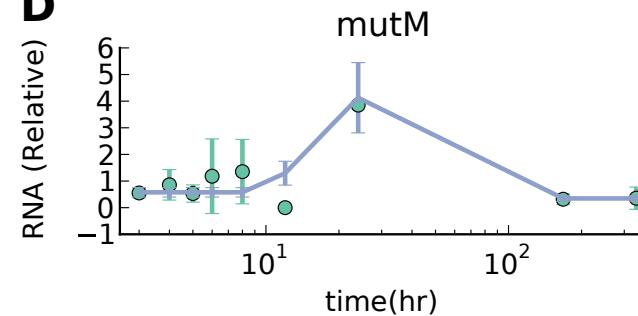
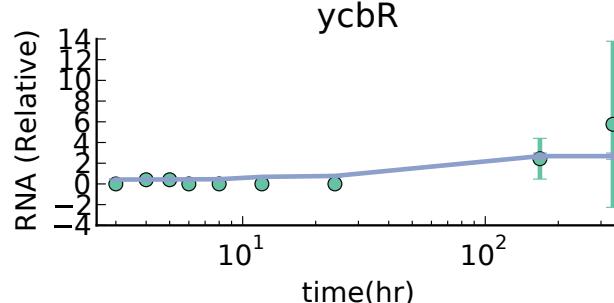
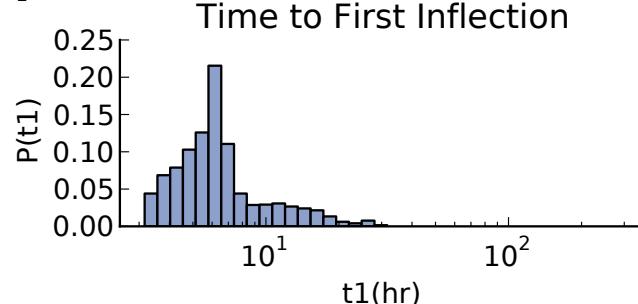
## Figure 2 - supplemental figure 1



# Figure 2-supplemental figure 2



# Figure 4-Supplemental Figure 1

**A****B****C****D****E****F**

<b>Proportionally controlled proteins</b>	
Enrichment Score: 15.722412271963268	
Term	FDR
GO:0018198~peptidyl-cysteine modification	3.219E-13
GO:0018197~peptidyl-aspartic acid modification	3.219E-13
GO:0018339~peptidyl-L-beta-methylthioaspartic acid biosynthetic process from peptidyl-aspartic acid	3.219E-13
Enrichment Score: 5.177276313087028	
Term	FDR
GO:0044271~nitrogen compound biosynthetic process	0.00
GO:0046394~carboxylic acid biosynthetic process	0.01
GO:0016053~organic acid biosynthetic process	0.01
GO:0009309~amine biosynthetic process	0.02
GO:0008652~cellular amino acid biosynthetic process	0.05
Enrichment Score: 5.0019785746451575	
Term	FDR
GO:0007049~cell cycle	0.00
GO:0051301~cell division	0.02
GO:0007059~chromosome segregation	0.15
Enrichment Score: 3.7902178093615957	
Term	FDR
GO:0042330~taxis	4.03E-4
GO:0007610~behavior	4.03E-4
GO:0007626~locomotory behavior	4.03E-4
GO:0048870~cell motility	0.20
GO:0001539~ciliary or flagellar motility	0.20
GO:0051674~localization of cell	0.20
GO:0006928~cell motion	0.22
GO:0043064~flagellum organization	4.11
GO:0030030~cell projection organization	10.53
GO:0009296~flagellum assembly	73.89
GO:0030031~cell projection assembly	90.39
Enrichment Score: 3.136632364510789	
Term	FDR
GO:0006790~sulfur metabolic process	0.04
GO:0009070~serine family amino acid biosynthetic process	0.29
GO:0044272~sulfur compound biosynthetic process	0.56
GO:0009069~serine family amino acid metabolic process	0.70
GO:0000097~sulfur amino acid biosynthetic process	0.91
GO:0000096~sulfur amino acid metabolic process	2.11
GO:0019344~cysteine biosynthetic process	8.05
GO:0006534~cysteine metabolic process	22.87
Enrichment Score: 2.968167724937097	
Term	FDR
GO:0006418~tRNA aminoacylation for protein translation	0.02
GO:0043038~amino acid activation	0.02
GO:0043039~tRNA aminoacylation	0.02
GO:0006399~tRNA metabolic process	0.04
GO:0034660~ncRNA metabolic process	0.14
GO:0009451~RNA modification	2.42
GO:0006400~tRNA modification	53.53
GO:0008033~tRNA processing	87.59
GO:0034470~ncRNA processing	87.90
GO:0006396~RNA processing	89.71

<b>Integrally controlled proteins</b>	
Enrichment Score: 3.2079342112759694	
Term	FDR
GO:0006071~glycerol metabolic process	8.67E-05
GO:0019400~alditol metabolic process	2.08E-03
GO:0019751~polyol metabolic process	2.26E-03
GO:0006072~glycerol-3-phosphate metabolic process	3.83E-01
GO:0045333~cellular respiration	4.55E+01
GO:0019637~organophosphate metabolic process	7.43E+01
GO:0006796~phosphate metabolic process	9.95E+01
GO:0006793~phosphorus metabolic process	9.98E+01

Common name	Entrez ID	Gene Name	Prediction	Sorted Category
ispD	948269	2-C-methyl-D-erythritol 4-phosphate cytidylyltransferase		Temporarily Up Regulated
dxr	945019	1-deoxy-D-xylulose 5-phosphate reductoisomerase		Down Regulated
rbsB	948261	D-ribose-binding periplasmic protein		Up Regulated
rbsC	948262	Ribose transport system permease protein rbsC		Ambiguous/Unsorted
yieP	948263	Uncharacterized HTH-type transcriptional regulator yieP	□	Down Regulated
fucU	945842	L-fucose mutarotase		Up Regulated
hemB	945017	Delta-aminolevulinic acid dehydratase		Ambiguous/Unsorted
tonB	945843	Protein tonB		Ambiguous/Unsorted
rbsA	948264	Ribose import ATP-binding protein rbsA; Ribose import ATP-binding protein rbsA 1		Ambiguous/Unsorted
rluB	945840	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase B		Down Regulated
rbsR	948266	Ribose operon repressor		Down Regulated
kch	945841	Putative potassium channel protein		Ambiguous/Unsorted
rbsD	948267	D-ribose pyranase		Ambiguous/Unsorted
dnaC	948864	DNA replication protein dnaC		Ambiguous/Unsorted
ydcl	948865	Uncharacterized HTH-type transcriptional regulator ydcl	["Transcription", "RNA related", "Type of regulation", "Genetic unit regulated", "transcription", "regulation of transcription DNA dependent"]	Down Regulated
btuR	945839	Cob(I)yrinic acid a,c-diamide adenosyltransferase		Ambiguous/Unsorted
hsdS	948867	Type-1 restriction enzyme EcoKI specificity protein		Down Regulated
adhE	945837	Aldehyde-alcohol dehydrogenase		Down Regulated
rbsK	948260	Ribokinase		Ambiguous/Unsorted
nadC	948869	Nicotinate-nucleotide pyrophosphorylase [carboxylating]		Ambiguous/Unsorted
ychE	945836	UPF0056 membrane protein yhcE		Temporarily Up Regulated
dosC	945835	Diguanylate cyclase yddV		Up Regulated
yddV	945835	Diguanylate cyclase yddV		Up Regulated
tauD	945021	Alpha-ketoglutarate-dependent taurine dioxygenase		Down Regulated
dnl	945022	DNA-damage-inducible protein I		Down Regulated
yccK	945023	Sulfurtransferase tusE		Ambiguous/Unsorted
mutH	947299	DNA mismatch repair protein mutH		Up Regulated
yieL	948272	Uncharacterized protein yieL	["Carbohydrate transport and metabolism"]	Temporarily Up Regulated
yahF	947298	Uncharacterized protein yahF	["Amino acid transport and metabolism", "Carbon compound utilization", "amino acid metabolic process"]	Temporarily Up Regulated
tdk	945834	Thymidine kinase		Ambiguous/Unsorted
ilvE	948278	Branched-chain-amino-acid aminotransferase		Ambiguous/Unsorted
smpB	947296	SsrA-binding protein		Down Regulated
ilvM	948279	Acetylactate synthase isozyme 2 small subunit		Down Regulated
amiC	947293	N-acetylumuramoyl-L-alanine amidase amiC		Down Regulated
tauB	945027	Taurine import ATP-binding protein tauB		Ambiguous/Unsorted
recC	947294	Exodeoxyribonuclease V gamma chain		Down Regulated
hns	945829	DNA-binding protein H-NS		Up Regulated
ylaC	948876	Inner membrane protein ylaC		Down Regulated
ygdL	947291	Uncharacterized protein ygdL	□	Down Regulated
csdL	947291	Uncharacterized protein ygdL		Down Regulated
ychJ	945828	UPF0225 protein ychJ		Down Regulated
ampD	948877	1,6-anhydro-N-acetylmuramyl-L-alanine amidase ampD		Temporarily Up Regulated
arcA	948874	Aerobic respiration control protein arcA		Ambiguous/Unsorted
hsdR	948878	Type I restriction enzyme EcoKI R protein		Down Regulated
yeoW	945826	Uncharacterized protein yeoW	["Central intermediary metabolism"]	Temporarily Down Regulated
hsdM	948872	Type I restriction enzyme EcoKI M protein		Down Regulated
rstB	948870	Sensor protein; Sensor protein rstB		Down Regulated
tauA	945030	Taurine-binding periplasmic protein		Down Regulated
atpF	948247	ATP synthase subunit b; ATP synthase B chain		Up Regulated
yaiI	945033	UPF0178 protein yaiI		Temporarily Up Regulated
mnmG	948248	tRNA uridine 5-carboxymethylaminomethyl modification enzyme mnmG		Down Regulated
aroL	945031	Shikimate kinase 2		Ambiguous/Unsorted
mioC	948249	Protein mioC		Ambiguous/Unsorted
rlmM	947283	UTI89_C3178; b2806; ECIAI39_3228; ECIAI1_2916; Z4123; c3376; ECED1_3259; ECUMN_3135; E2348C_3073; APEC01_3725; ECS88_3075; EC55989_3085; ECDH10B_2975		Down Regulated
yggE	947283	UTI89_C3178; b2806; ECIAI39_3228; ECIAI1_2916; Z4123; c3376; ECED1_3259; ECUMN_3135; E2348C_3073; APEC01_3725; ECS88_3075; EC55989_3085; ECDH10B_2975		Down Regulated
atpD	948244	ATP synthase subunit beta		Up Regulated
yaiW	945038	Uncharacterized protein yaiW	["Carbon compound utilization", "RNA related", "Type of regulation", "Genetic unit regulated", "transcription", "regulation of transcription DNA"]	Temporarily Up Regulated
ptrA	947284	Protease 3		Ambiguous/Unsorted
suhB	947285	Inositol-1-monophosphatase		Temporarily Down Regulated
recB	947286	Exodeoxyribonuclease V beta chain		Up Regulated
RecD	947287	Exodeoxyribonuclease V alpha chain		Down Regulated
pstB	948240	Phosphate import ATP-binding protein pstB		Ambiguous/Unsorted
oppB	945823	Oligopeptide transport system permease protein oppB		Down Regulated
cls	945821	Cardiolipin synthetase		Up Regulated
argA	947289	Amino-acid acetyltransferase		Ambiguous/Unsorted
rsmE	945816	Ribosomal RNA small subunit methyltransferase E		Ambiguous/Unsorted
Dos	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Ambiguous/Unsorted

dosP	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Ambiguous/Unsorted
ygiT	945814	Uncharacterized HTH-type transcriptional regulator ygiT	[' Carbon compound utilization', 'metabolic process']	Up Regulated
mqsA	945814	Uncharacterized HTH-type transcriptional regulator ygiT		Up Regulated
flgD	945813	Basal-body rod modification protein flgD		Ambiguous/Unsorted
oppF	945818	Oligopeptide transport ATP-binding protein oppF		Ambiguous/Unsorted
flhC	947280	Flagellar transcriptional activator flhC		Down Regulated
sgcX	948840	Putative sgc region protein sgcX		Up Regulated
psiF	945040	Phosphate starvation-inducible protein psiF		Up Regulated
phoA	945041	Alkaline phosphatase		Ambiguous/Unsorted
yaiA	945043	Uncharacterized protein yaiA	['Amino acid transport and metabolism', ' Building block biosynthesis', 'aromatic amino acid family biosynthetic process']	Up Regulated
asnA	948258	Aspartate--ammonia ligase		Ambiguous/Unsorted
phoR	945044	Sensor protein; Phosphate regulon sensor protein phoR		Ambiguous/Unsorted
aroM	945045	Protein aroM		Down Regulated
asnC	948259	Asparaginyl-tRNA synthetase; Regulatory protein asnC		Down Regulated
ravA	948256	ATPase ravA		Temporarily Down Regula
phoB	945046	Phosphate regulon transcriptional regulatory protein phoB		Temporarily Up Regulated
csdE	947274	Uncharacterized sulfE-like protein ygdK		Ambiguous/Unsorted
yaiE	945048	UPF0345 protein yaiE		Down Regulated
syd	947271	Protein syd		Down Regulated
sbcD	945049	Nuclease sbcCD subunit D		Temporarily Up Regulated
kup	948255	Low affinity potassium transport system protein kup		Ambiguous/Unsorted
atpB	948252	ATP synthase subunit a		Down Regulated
gcvA	947278	Glycine cleavage system transcriptional activator		Temporarily Up Regulated
ygdl	947276	Uncharacterized lipoprotein ygdl	[' Carbon compound utilization', ' RNA related', ' Type of regulation', ' Genetic unit regulated']	Up Regulated
uxuR	948849	Uxu operon transcriptional regulator		Temporarily Up Regulated
oppD	945802	Oligopeptide transport ATP-binding protein oppD		Ambiguous/Unsorted
ycgN	945804	UPF0260 protein ycgN		Down Regulated
glcB	948857	Malate synthase G		Up Regulated
narJ	945807	Respiratory nitrate reductase 1 delta chain		Up Regulated
gudP	947265	Probable glucarate transporter		Temporarily Down Regula
iilvH	947267	Acetolactate synthase isozyme 3 small subunit		Ambiguous/Unsorted
tnaB	948220	Low affinity tryptophan permease		Temporarily Up Regulated
mnmE	948222	tRNA modification GTPase mnmE		Temporarily Down Regula
rumB	947260	23S rRNA (uracil-5-)methyltransferase rumB		Ambiguous/Unsorted
wrbA	947263	Flavoprotein wrbA; Putative flavoprotein wrbA		Up Regulated
sdaB	947262	L-serine dehydratase 2		Up Regulated
yieE	948226	Uncharacterized protein yieE	['Amino acid transport and metabolism']	Temporarily Down Regula
yieF	948225	Uncharacterized protein yieF		Up Regulated
yidZ	948227	HTH-type transcriptional regulator yidZ		Up Regulated
yieK	948229	Uncharacterized protein yieK	['Carbohydrate transport and metabolism']	Temporarily Up Regulated
ygdG	947256	Uncharacterized exonuclease xni		Temporarily Up Regulated
barA	947255	Sensor protein; Signal transduction histidine-protein kinase barA		Ambiguous/Unsorted
mazG	947254	Protein mazG		Down Regulated
pepN	947253	Aminopeptidase N		Ambiguous/Unsorted
mazF	947252	PemK-like protein 1		Temporarily Up Regulated
nhoA	947251	N-hydroxyarylamino O-acetyltransferase		Ambiguous/Unsorted
bgfB	948234	6-phospho-beta-glucosidase bgfB		Ambiguous/Unsorted
phoU	948233	Phosphate transport system protein phoU		Ambiguous/Unsorted
yieH	948232	Phosphatase yieH		Down Regulated
pstS	948237	Phosphate-binding protein pstS		Up Regulated
gudD	947258	Glucarate dehydratase		Ambiguous/Unsorted
qmcA	947257	Protein qmcA		Temporarily Up Regulated
ibpA	948200	Small heat shock protein ibpA		Down Regulated
CYBB	947241	Cytochrome b561		Down Regulated
ygcR	947240	Putative electron transfer flavoprotein subunit ygcR		Down Regulated
rumA	947243	23S rRNA (uracil-5-)methyltransferase rumA		Temporarily Down Regula
mazE	947245	PemK-like protein 1		Ambiguous/Unsorted
relA	947244	GTP pyrophosphokinase		Ambiguous/Unsorted
ybdK	947246	Carboxylate-amine ligase ybdK		Up Regulated
ygiC	947249	Uncharacterized protein ygiC	□	Down Regulated
recF	948209	DNA replication and repair protein recF		Temporarily Up Regulated
ydCL	948203	Uncharacterized lipoprotein ydCL	['Amino acid transport and metabolism', 'amino acid transport']	Up Regulated
yjiA	948882	Uncharacterized GTP-binding protein yjiA	□	Ambiguous/Unsorted
opgB	948888	Phosphoglycerol transferase I		Down Regulated
yjiA	948887	Uncharacterized protein yjiA	□	Down Regulated
cusR	945003	Transcriptional regulatory protein cusR		Temporarily Down Regula
yidB	948212	Uncharacterized protein yidB	□	Up Regulated
pal	945004	Peptidoglycan-associated lipoprotein		Up Regulated

yegD	947234	Uncharacterized chaperone protein yegD			Temporarily Up Regulated
lacI	945007	Lactose operon repressor			Ambiguous/Unsorted
lacZ	945006	Beta-galactosidase			Down Regulated
hisQ	947235	Histidine transport system permease protein hisQ			Down Regulated
dnaN	948218	DNA polymerase III subunit beta			Down Regulated
dnaA	948217	Chromosomal replication initiator protein dnaA			Up Regulated
rpmH	948216	50S ribosomal protein L34			Up Regulated
rnpA	948215	Ribonuclease P protein component			Temporarily Down Regula
cynR	945001	HTH-type transcriptional regulator cynR			Up Regulated
cysJ	947239	Sulfite reductase [NADPH] flavoprotein alpha-component			Down Regulated
osmY	948895	Osmotically-inducible protein Y			Up Regulated
rimI	948894	Ribosomal-protein-alanine acetyltransferase			Ambiguous/Unsorted
fhuF	948891	Ferric iron reductase protein fhuF			Temporarily Up Regulated
holD	948890	DNA polymerase III subunit psi			Temporarily Up Regulated
yjG	948899	5'-nucleotidase yjG			Down Regulated
mrr	948898	Mrr restriction system protein			Ambiguous/Unsorted
prfC	948897	Peptide chain release factor 3			Temporarily Down Regula
lpp	946175	Major outer membrane lipoprotein			Up Regulated
entB	946178	Isochorismatase			Up Regulated
ydhR	946177	Putative monooxygenase ydhR			Down Regulated
ynhG	946174	Uncharacterized protein ynhG			Ambiguous/Unsorted
slyA	946167	Transcriptional regulator slyA			Temporarily Down Regula
plsX	946165	Fatty acid/phospholipid synthesis protein plsX			Ambiguous/Unsorted
pdxY	946162	Pyridoxamine kinase			Down Regulated
rsxG	946158	Electron transport complex protein rnfG			Ambiguous/Unsorted
rnt	946159	Ribonuclease T			Ambiguous/Unsorted
uidR	946150	HTH-type transcriptional regulator uidR			Down Regulated
cnu	946152	OriC-binding nucleoid-associated protein			Up Regulated
hdhA	946151	7-alpha-hydroxysteroid dehydrogenase			Down Regulated
lhr	946156	Probable ATP-dependent helicase lhr			Down Regulated
uidA	946149	Beta-glucuronidase			Ambiguous/Unsorted
fumC	946147	Fumarate hydratase class II			Temporarily Down Regula
rsxB	946146	Electron transport complex protein rnfB			Down Regulated
topB	946141	DNA topoisomerase 3			Temporarily Up Regulated
ycel	946145	Protein ycel			Ambiguous/Unsorted
pntB	946144	NAD(P) transhydrogenase subunit beta			Ambiguous/Unsorted
fecC	948826	Fe(3+) dicitrate transport system permease protein fecC			Temporarily Up Regulated
fecE	948819	Fe(3+) dicitrate transport ATP-binding protein fecE			Up Regulated
yfcZ	948817	UPF0381 protein yfcZ			Up Regulated
sspA	944744	Stringent starvation protein A			Ambiguous/Unsorted
yigB	948802	Uncharacterized zinc-type alcohol dehydrogenase-like protein yigB	['Amino acid transport and metabolism', 'Carbon compound utilization', 'metabolic process']		Up Regulated
ydl	946190	Esterase ydl			Up Regulated
ybaQ	948800	Uncharacterized HTH-type transcriptional regulator ybaQ	['Energy production and conversion', 'Energy production transport', 'electron transport', 'amino acid metabolic process']		Temporarily Down Regula
yddH	946192	Uncharacterized protein yddH			Up Regulated
sapB	946191	Peptide transport system permease protein sapB			Temporarily Down Regula
ygcE	946193	Uncharacterized sugar kinase ygcE	['Central intermediary metabolism', 'carbohydrate metabolic process']		Temporarily Up Regulated
trxA	948289	Thioredoxin-1			Up Regulated
ydiH	946194	Uncharacterized protein ydiH	['proteolysis']		Up Regulated
fucl	946195	L-fucose isomerase			Up Regulated
ilvA	948287	Threonine dehydratase biosynthetic			Ambiguous/Unsorted
ppiC	948285	Peptidyl-prolyl cis-trans isomerase C			Ambiguous/Unsorted
rstA	946199	Transcriptional regulatory protein rstA			Temporarily Up Regulated
gpp	948291	Guanosine-5'-triphosphate,3'-diphosphate pyrophosphatase			Down Regulated
rep	948292	ATP-dependent DNA helicase rep			Down Regulated
wzyE	948293	Putative ECA polymerase			Down Regulated
ydiL	946181	Uncharacterized protein ydiL			Temporarily Up Regulated
ydhZ	946180	Uncharacterized protein ydhZ			Up Regulated
rffH	948299	Glucose-1-phosphate thymidylyltransferase; Glucose-1-phosphate thymidylyltransferase 2			Temporarily Down Regula
sufS	946185	Cysteine desulfurase			Up Regulated
torR	946182	TorCAD operon transcriptional regulatory protein torR			Temporarily Up Regulated
ydiJ	946189	Uncharacterized protein ydiJ	['Energy production and conversion']		Ambiguous/Unsorted
rffA	948296	Lipopolysaccharide biosynthesis protein rffA			Down Regulated
ybaS	946187	Glutaminase 1			Up Regulated
puuA	946202	Gamma-glutamylputrescine synthetase			Down Regulated
Int	946201	Apolipoprotein N-acyltransferase			Ambiguous/Unsorted
sapD	946203	Peptide transport system ATP-binding protein sapD			Down Regulated
yadD	944781	Uncharacterized protein yadD	['Replication recombination and repair', 'DNA recombination']		Down Regulated
appA	946206	Periplasmic appA protein			Up Regulated

ydiA	946207	Uncharacterized protein yuaU; Putative phosphotransferase ydiA			Down Regulated
ppsR	946207	Uncharacterized protein yuaU; Putative phosphotransferase ydiA			Down Regulated
mdtB	946606	Multidrug resistance protein mdtB			Up Regulated
mdtC	946608	Multidrug resistance protein mdtC			Ambiguous/Unsorted
rffE	944789	UDP-N-acetylglucosamine 2-epimerase			Ambiguous/Unsorted
yegQ	946609	Uncharacterized protease yegQ			Down Regulated
ydiB	946200	Quinate/shikimate dehydrogenase			Temporarily Up Regulated
ftsZ	944786	Cell division protein ftsZ			Down Regulated
baeS	946611	Sensor protein; Signal transduction histidine-protein kinase baeS			Down Regulated
ybiS	945441	Uncharacterized protein ybiS	["phosphoenolpyruvate dependent sugar phosphotransferase system"]		Ambiguous/Unsorted
ybiT	945440	Uncharacterized ABC transporter ATP-binding protein ybiT			Ambiguous/Unsorted
flhD	945442	Transcriptional activator flhD			Down Regulated
puuE	945446	4-aminobutyrate aminotransferase			Down Regulated
ydcF	946215	Protein ydcF			Ambiguous/Unsorted
fadK	946213	Short-chain-fatty-acid-CoA ligase			Ambiguous/Unsorted
mltC	945428	Membrane-bound lytic murein transglycosylase C			Temporarily Up Regulated
ydiS	946212	Probable electron transfer flavoprotein-quinone oxidoreductase ydiS			Temporarily Down Regulated
folA	944790	Dihydrofolate reductase; Dihydrofolate reductase type 1			Ambiguous/Unsorted
ydiU	946219	UPF0061 protein ydiU			Down Regulated
ydiY	946218	Uncharacterized protein ydiY			Up Regulated
murE	944791	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate--2,6-diaminopimelate ligase			Ambiguous/Unsorted
lpxL	946216	Lipid A biosynthesis lauroyl acyltransferase			Up Regulated
rihC	944796	Non-specific ribonucleoside hydrolase rihC			Up Regulated
leuB	944798	3-isopropylmalate dehydrogenase			Temporarily Down Regulated
aroD	946210	3-dehydroquinate dehydratase			Down Regulated
aceK	944797	Isocitrate dehydrogenase kinase/phosphatase			Down Regulated
ftsI	944799	Peptidoglycan synthetase ftsI			Down Regulated
yegE	946600	Uncharacterized protein yegE	["Signal transduction mechanisms", 'Type of regulation', 'two component signal transduction system phosphorelay', 'regulation of transcript']		Temporarily Up Regulated
mdtA	946604	Multidrug resistance protein mdtA			Up Regulated
ybiI	945434	Uncharacterized protein ybiI	[" Adaptation to stress"]		Up Regulated
ybiJ	945433	Uncharacterized protein ybiJ			Temporarily Up Regulated
pps	946209	Phosphoenolpyruvate synthase			Ambiguous/Unsorted
ppsA	946209	Phosphoenolpyruvate synthase			Ambiguous/Unsorted
dinG	945431	Probable ATP-dependent helicase dinG			Down Regulated
mntR	945437	Transcriptional regulator mntR			Ambiguous/Unsorted
glnQ	945435	Glutamine transport ATP-binding protein glnQ			Down Regulated
dapB	944762	Dihydronicotinate reductase			Ambiguous/Unsorted
Mog	944760	Molybdopterin biosynthesis mog protein			Up Regulated
rpsT	944759	30S ribosomal protein S20			Down Regulated
nhaR	944757	Transcriptional activator protein nhaR			Ambiguous/Unsorted
rhlE	945425	Putative ATP-dependent RNA helicase rhlE			Down Regulated
ybiB	945424	Uncharacterized protein ybiB	[" Energy metabolism carbon ", 'nitrate assimilation']		Ambiguous/Unsorted
ybiH	945421	Uncharacterized HTH-type transcriptional regulator ybiH	["Defense mechanisms", 'Primary Active Transporters']		Up Regulated
exbB	945420	Biopolymer transport protein exbB			Temporarily Up Regulated
apaH	944770	Bis(5'-nucleosyl)-tetraphosphatase, symmetrical; Bis(5'-nucleosyl)-tetraphosphatase [symmetrical]			Ambiguous/Unsorted
ftsA	944778	Cell division protein ftsA			Ambiguous/Unsorted
ispH	944777	4-hydroxy-3-methylbut-2-enyl diphosphate reductase			Ambiguous/Unsorted
apaG	944772	Protein apaG			Up Regulated
sspB	944774	Stringent starvation protein B			Down Regulated
rpmD	947797	50S ribosomal protein L30			Down Regulated
secY	947799	Preprotein translocase subunit secY; Preprotein translocase secY subunit			Down Regulated
rplO	947798	50S ribosomal protein L15			Down Regulated
rpsD	947793	30S ribosomal protein S4			Temporarily Up Regulated
rpsK	947792	30S ribosomal protein S11			Down Regulated
rpsE	947795	30S ribosomal protein S5			Ambiguous/Unsorted
ybhG	945414	UPF0194 membrane protein ybhG			Up Regulated
ybhF	945413	Uncharacterized ABC transporter ATP-binding protein ybhF			Temporarily Up Regulated
rpsM	947791	30S ribosomal protein S13; 30S ribosomal protein			Down Regulated
yehI	946649	Uncharacterized protein yehI	["Translation ribosomal structure and biogenesis", 'translation', 'ion transport']		Up Regulated
metC	946240	Cystathione beta-lyase metC			Ambiguous/Unsorted
ybdG	946243	Uncharacterized protein ybdG			Ambiguous/Unsorted
fiu	946246	Catecholate siderophore receptor fiu			Up Regulated
rlnN	946249	Ribosomal RNA large subunit methyltransferase N			Down Regulated
rimN	947783	Putative ribosome maturation factor rimN			Up Regulated
SDHA	945402	Succinate dehydrogenase flavoprotein subunit			Ambiguous/Unsorted
ybhR	945403	Inner membrane transport permease ybhR			Temporarily Up Regulated
rplQ	947784	50S ribosomal protein L17			Temporarily Down Regulated
yrdD	947782	Uncharacterized protein yrdD	["Replication recombination and repair", 'amino acid biosynthetic process', 'aromatic amino acid family biosynthetic process']		Up Regulated

dld	946653	D-lactate dehydrogenase		Ambiguous/Unsorted
mscL	947787	Large-conductance mechanosensitive channel		Temporarily Up Regulated
trkA	947788	Trk system potassium uptake protein trkA		Up Regulated
yhdN	947785	Uncharacterized protein yhdN	□	Down Regulated
zntR	947786	HTH-type transcriptional regulator zntR		Down Regulated
yeiE	946657	Uncharacterized HTH-type transcriptional regulator yeiE	["Transcription", "RNA related", "Type of regulation", "transcription", "regulation of transcription DNA dependent"]	Down Regulated
yegW	946639	Uncharacterized HTH-type transcriptional regulator yegW	□	Temporarily Up Regulated
astC	946255	Succinylornithine transaminase		Up Regulated
spy	946253	Spheroplast protein Y		Temporarily Up Regulated
astB	946259	N-succinylarginine dihydrolase		Up Regulated
lptE	946257	LPS-assembly lipoprotein lptE		Ambiguous/Unsorted
yrdB	947774	Uncharacterized protein yrdB	["Building block biosynthesis", "purine nucleotide biosynthetic process", "aromatic amino acid family biosynthetic process"]	Temporarily Down Regulated
yrdA	947775	Protein yrdA		Ambiguous/Unsorted
aroE	947776	Shikimate dehydrogenase; Quinate/shikimate dehydrogenase		Up Regulated
pncB	946648	Nicotinate phosphoribosyltransferase		Down Regulated
rihB	946646	Pyrimidine-specific ribonucleoside hydrolase rihB		Temporarily Up Regulated
mrp	946627	Protein mrp		Down Regulated
pntA	946628	NAD(P) transhydrogenase subunit alpha		Up Regulated
helD	946227	Helicase IV		Down Regulated
pheS	946223	Phenylalanyl-tRNA synthetase alpha chain		Ambiguous/Unsorted
ycgL	946226	UPF0745 protein ycgL		Ambiguous/Unsorted
aaeR	947760	HTH-type transcriptional activator aaeR		Up Regulated
acrF	947768	Acriflavine resistance protein F		Temporarily Up Regulated
yhdW	947766	Putative amino-acid ABC transporter-binding protein yhdW		Up Regulated
yegU	946630	Uncharacterized protein yegU	□	Ambiguous/Unsorted
yhdZ	947763	Uncharacterized amino-acid ABC transporter ATP-binding protein yhdZ		Down Regulated
yhdY	947764	Inner membrane amino-acid ABC transporter permease protein yhdY		Up Regulated
fbaB	946632	Fructose-bisphosphate aldolase class 1		Ambiguous/Unsorted
pfkB	946230	6-phosphofructokinase isozyme 2		Ambiguous/Unsorted
chbG	946231	UPF0249 protein chbG		Temporarily Up Regulated
tldD	947749	Protein tldD		Down Regulated
ydjN	946238	Uncharacterized symporter ydjN	□	Down Regulated
yniA	946236	Uncharacterized protein yniA	□	Up Regulated
katE	946234	Catalase HPII; Catalase		Ambiguous/Unsorted
cedA	946235	Cell division activator cedA		Down Regulated
yhch	947750	Uncharacterized protein yhch	["Carbohydrate transport and metabolism", "carbohydrate metabolic process"]	Up Regulated
tolA	946625	Protein tolA		Down Regulated
accB	947758	Biotin carboxyl carrier protein of acetyl-CoA carboxylase		Ambiguous/Unsorted
hpt	946624	Hypoxanthine phosphoribosyltransferase		Ambiguous/Unsorted
cyaY	947754	Protein cyaY		Up Regulated
cyaA	947755	Adenylate cyclase		Down Regulated
nanA	947742	N-acetyleneuraminate lyase 1; N-acetyleneuraminate lyase		Up Regulated
ccmE	946697	Cytochrome c-type biogenesis protein ccmE		Temporarily Up Regulated
aaeA	947748	p-hydroxybenzoic acid efflux pump subunit aaeA		Ambiguous/Unsorted
yejK	946690	Nucleoid-associated protein ndpA		Ambiguous/Unsorted
rml	946691	Ribosomal RNA large subunit methyltransferase I		Ambiguous/Unsorted
yejL	946694	UPF0352 protein yejL		Temporarily Up Regulated
rtn	946695	Protein rtn		Up Regulated
lpxT	946693	Inner membrane protein yeiU		Down Regulated
recQ	948318	ATP-dependent DNA helicase recQ		Down Regulated
dapE	948313	Succinyl-diaminopimelate desuccinylase		Ambiguous/Unsorted
pldB	948314	Lysophospholipase L2		Down Regulated
metR	948310	HTH-type transcriptional regulator metR		Down Regulated
hemY	948311	Protein hemY		Ambiguous/Unsorted
ushA	947331	Protein ushA		Ambiguous/Unsorted
yejM	946685	Inner membrane protein yejM		Down Regulated
mlaE	947732	UPF0393 inner membrane protein yrbE		Temporarily Down Regulated
yrbE	947732	UPF0393 inner membrane protein yrbE		Temporarily Down Regulated
flgC	946687	Flagellar basal-body rod protein flgC		Down Regulated
yejF	946689	Uncharacterized ABC transporter ATP-binding protein yejF		Ambiguous/Unsorted
cueO	947736	Blue copper oxidase cueO		Temporarily Up Regulated
kdsD	947734	Arabinose 5-phosphate isomerase		Ambiguous/Unsorted
osmF	946681	Putative osmoprotectant uptake system substrate-binding protein osmF		Up Regulated
flgM	946684	Negative regulator of flagellin synthesis		Ambiguous/Unsorted
pldA	948307	Phospholipase A1		Up Regulated
rffG	948300	dTDP-glucose 4,6-dehydratase		Down Regulated
ydhP	947340	Inner membrane transport protein ydhP		Temporarily Down Regulated
rffM	948301	Probable UDP-N-acetyl-D-mannosaminuronic acid transferase		Temporarily Up Regulated

gltB	947724	Glutamate synthase [NADPH] large chain		Ambiguous/Unsorted
gltD	947723	Glutamate synthase [NADPH] small chain		Down Regulated
ampE	946678	Protein ampE		Temporarily Up Regulated
speE	947726	Spermidine synthase		Ambiguous/Unsorted
secG	947720	Protein-export membrane protein secG		Up Regulated
fruK	946676	1-phosphofructokinase		Down Regulated
fruB	946677	Multiphosphoryl transfer protein		Ambiguous/Unsorted
yeiP	946674	Elongation factor P-like protein		Ambiguous/Unsorted
yejA	946675	Uncharacterized protein yejA		Down Regulated
fruA	946672	PTS system fructose-specific EIIBC component		Down Regulated
fixA	947316	Protein fixA		Ambiguous/Unsorted
pcnB	947318	Poly(A) polymerase		Down Regulated
lysA	947313	Diaminopimelate decarboxylase		Ambiguous/Unsorted
galR	947314	HTH-type transcriptional regulator galR		Temporarily Down Regula
aas	947315	Bifunctional protein aas		Temporarily Up Regulated
hpf	947718	Probable sigma(54) modulation protein		Down Regulated
pspB	945893	Phage shock protein B		Temporarily Up Regulated
speD	947719	S-adenosylmethionine decarboxylase proenzyme		Ambiguous/Unsorted
speB	947715	Agmatinase		Down Regulated
lysP	946667	Lysine-specific permease		Down Regulated
amiD	945494	N-acetyl muramoyl-L-alanine amidase amiD		Temporarily Up Regulated
rpoN	947714	RNA polymerase sigma-54 factor		Down Regulated
ybjQ	945493	UPF0145 protein ybjQ		Temporarily Down Regula
ybjT	945496	Uncharacterized protein ybjT	['Cell wall membrane envelope biogenesis']	Temporarily Down Regula
nfo	946669	Endonuclease 4; Probable endonuclease 4		Down Regulated
ybjS	945495	Uncharacterized protein ybjS	□	Ambiguous/Unsorted
aat	945490	Leucyl/phenylalanyl-tRNA-protein transferase		Down Regulated
cdd	946663	Cytidine deaminase		Up Regulated
ybjP	945491	Uncharacterized lipoprotein ybjP	['Amino acid transport and metabolism', 'Building block biosynthesis']	Up Regulated
ppbG	946662	D-alanyl-D-alanine endopeptidase		Down Regulated
ybjD	945498	Uncharacterized protein ybjD	['SOS response']	Up Regulated
pspC	945499	Phage shock protein C		Up Regulated
kduD	947323	2-deoxy-D-gluconate 3-dehydrogenase		Down Regulated
yqeF	947324	Probable acetyl-CoA acetyltransferase		Temporarily Up Regulated
ymdC	947321	Uncharacterized protein ymdC	□	Temporarily Up Regulated
macA	947322	Macrolide-specific efflux protein macA		Ambiguous/Unsorted
iraP	947709	Anti-adapter protein iraP		Temporarily Up Regulated
ypeV	947320	Uncharacterized sigma-54-dependent transcriptional regulator ypeV	['Signal transduction mechanisms', 'Genetic unit regulated', 'two component signal transduction system phosphorelay', 'regulation of trans	Up Regulated
dusB	947707	tRNA-dihydrouridine synthase B		Temporarily Up Regulated
prmA	947708	Ribosomal protein L11 methyltransferase		Ambiguous/Unsorted
artP	945489	Arginine transport ATP-binding protein artP		Temporarily Down Regula
potF	945880	Putrescine-binding periplasmic protein		Ambiguous/Unsorted
gmr	945868	Protein gmr		Temporarily Up Regulated
yciT	945869	Uncharacterized HTH-type transcriptional regulator yciT		Ambiguous/Unsorted
rimK	945884	Ribosomal protein S6 modification protein		Ambiguous/Unsorted
csrD	947702	Uncharacterized protein yhdA		Temporarily Up Regulated
ybjN	945482	Uncharacterized protein ybjN	['Energy metabolism carbon', 'electron transport', 'translation']	Down Regulated
murA	947703	UDP-N-acetylglucosamine 1-carboxyvinyltransferase		Ambiguous/Unsorted
nfsA	945483	Oxygen-insensitive NADPH nitroreductase		Ambiguous/Unsorted
sapA	945873	Peptide transport periplasmic protein sapA		Up Regulated
ycjF	945878	UPF0283 membrane protein ycjF		Temporarily Down Regula
prr	945876	Gamma-aminobutyraldehyde dehydrogenase		Up Regulated
ycjW	945875	Uncharacterized HTH-type transcriptional regulator ycjW	['Transcription', 'RNA related', 'Type of regulation', 'Genetic unit regulated', 'transcription', 'regulation of transcription DNA dependent']	Ambiguous/Unsorted
potG	945476	Putrescine transport ATP-binding protein potG		Ambiguous/Unsorted
grxA	945479	Glutaredoxin-1		Ambiguous/Unsorted
tyrR	945879	Transcriptional regulatory protein tyrR		Ambiguous/Unsorted
ybjI	945470	Phosphatase ybjI		Down Regulated
ihfA	945472	Integration host factor subunit alpha		Ambiguous/Unsorted
ybjL	945474	Putative transport protein ybjL		Ambiguous/Unsorted
puuD	945882	Gamma-glutamyl-gamma-aminobutyrate hydrolase		Ambiguous/Unsorted
rppH	947300	RNA pyrophosphohydrolase		Temporarily Up Regulated
pspA	945887	Phage shock protein A		Down Regulated
puuR	945886	HTH-type transcriptional regulator puuR		Up Regulated
ompG	945889	Outer membrane protein G		Ambiguous/Unsorted
ygdR	947304	Uncharacterized lipoprotein ygdR	['Amino acid transport and metabolism', 'Building block biosynthesis', 'amino acid metabolic process']	Temporarily Up Regulated
lgt	947303	Prolipoprotein diacylglycerol transferase		Ambiguous/Unsorted
yfhM	947302	Uncharacterized lipoprotein yfhM	□	Up Regulated
rhmD	945881	L-rhamnonate dehydratase		Ambiguous/Unsorted

yfaW	945881	L-rhamnionate dehydratase		Ambiguous/Unsorted
tas	947306	Protein tas		Temporarily Up Regulated
ascG	947305	HTH-type transcriptional regulator ascG		Ambiguous/Unsorted
acrD	945464	Probable aminoglycoside efflux pump		Ambiguous/Unsorted
rimO	945465	Ribosomal protein S12 methylthiotransferase rimO		Down Regulated
yliE	945462	Uncharacterized protein yliE	["Signal transduction mechanisms", "Type of regulation", "two component signal transduction system phosphorelay", "transcription", "regulation"]	Up Regulated
rssB	945855	Protein hnr		Temporarily Down Regulated
yciO	945854	Uncharacterized protein yciO	□	Ambiguous/Unsorted
Ogt	945853	Methylated-DNA-protein-cysteine methyltransferase		Down Regulated
add	945851	Adenosine deaminase		Ambiguous/Unsorted
gsiA	945457	Glutathione import ATP-binding protein gsiA		Down Regulated
gsiB	945459	Glutathione-binding protein gsiB		Ambiguous/Unsorted
deoR	945453	Deoxyribose operon repressor		Down Regulated
moeA	945454	Molybdopterin biosynthesis protein moeA		Ambiguous/Unsorted
dacC	945455	D-alanyl-D-alanine carboxypeptidase dacC		Ambiguous/Unsorted
folC	945451	Bifunctional protein folC		Ambiguous/Unsorted
moeB	945452	Molybdopterin biosynthesis protein moeB		Temporarily Down Regulated
ycIV	945857	Protein trpH		Down Regulated
ycIW	945859	Uncharacterized protein yciW	["Lipid transport and metabolism"]	Down Regulated
tktB	945865	Transketolase 2		Up Regulated
rnb	945864	Exoribonuclease 2		Temporarily Down Regulated
osmB	945866	Osmotically-inducible lipoprotein B		Up Regulated
ydfI	945861	Uncharacterized oxidoreductase ydfI	["Carbon compound utilization"]	Up Regulated
ycIN	945860	Protein yciN		Up Regulated
dapF	948364	Diaminopimelate epimerase		Down Regulated
ybcJ	945158	Uncharacterized protein ybcJ	□	Ambiguous/Unsorted
yihN	948365	Inner membrane protein yihN		Ambiguous/Unsorted
glnL	948360	Nitrogen regulation protein NR(II); Sensor protein		Down Regulated
proX	947165	Glycine betaine-binding periplasmic protein		Temporarily Up Regulated
glnG	948361	Nitrogen regulation protein NR(I)		Temporarily Up Regulated
emrA	947166	Multidrug resistance protein A		Down Regulated
hemN	948362	Oxygen-independent coproporphyrinogen-III oxidase		Down Regulated
yihL	948363	UPF0241 protein yihl		Ambiguous/Unsorted
luxS	947168	S-ribosylhomocysteine lyase		Ambiguous/Unsorted
allC	945150	Allantoate amidohydrolase		Down Regulated
ribA	945154	Glucose-1-phosphate thymidylyltransferase; Glucose-1-phosphate thymidylyltransferase 1		Down Regulated
yihL	948368	Uncharacterized HTH-type transcriptional regulator yihL	["Amino acid transport and metabolism", "Carbon compound utilization", "Central intermediary metabolism", "Primary Active Transporters", "nucleotide transporters"]	Down Regulated
typA	948369	GTP-binding protein typA/BipA; GTP-binding protein typA/bipA		Ambiguous/Unsorted
rplT	945152	50S ribosomal protein L20		Temporarily Up Regulated
ytfE	948724	Regulator of cell morphogenesis and NO signaling		Ambiguous/Unsorted
malY	945937	Protein malY		Up Regulated
Cyca	948725	D-serine/D-alanine/glycine transporter		Down Regulated
ytfB	948727	Uncharacterized protein ytfB	["Replication recombination and repair", "DNA recombination", "DNA integration"]	Up Regulated
rplI	948720	50S ribosomal protein L9		Ambiguous/Unsorted
rpsR	948721	30S ribosomal protein S18		Down Regulated
mhpR	945938	Mhp operon transcriptional activator		Temporarily Up Regulated
pbpC	947152	Penicillin-binding protein 1C		Temporarily Down Regulated
tdt	948378	D-tyrosyl-tRNA(Tyr) deacylase		Down Regulated
dbpA	947153	ATP-independent RNA helicase dbpA		Down Regulated
yqcA	947151	Uncharacterized protein yqcA	□	Ambiguous/Unsorted
ygaM	947157	Uncharacterized protein ygaM	["Cell wall membrane envelope biogenesis"]	Up Regulated
prpD	945931	2-methylcitrate dehydratase		Ambiguous/Unsorted
cpdB	948729	ECs5191; ECP_4467; ECSE_4519; EcSMS35_4692; ECUMN_4750; Z5824; EcolC_3793; ECS88_4807; E2348C_4544; EC55989_4773; ECDH10B_4408; ECED1_5072; ECH74115_5730; ECIA1_4447; b4213; Upregulated		Up Regulated
yihP	948371	Inner membrane symporter yihP		Down Regulated
nrdE	947155	Ribonucleoside-diphosphate reductase; Ribonucleoside-diphosphate reductase 2 subunit alpha		Temporarily Up Regulated
cysQ	948728	3'(2'),5'-bisphosphate nucleotidase cysQ		Up Regulated
sfmD	945160	Outer membrane usher protein sfmD		Ambiguous/Unsorted
yegI	947159	Uncharacterized protein yegI	□	Ambiguous/Unsorted
macB	945164	Macrolide export ATP-binding/permease protein macB		Up Regulated
glnA	948370	Glutamine synthetase		Temporarily Down Regulated
ytfJ	948737	Uncharacterized protein ytfJ	["Energy production and conversion", "Secondary metabolites biosynthesis transport and catabolism"]	Temporarily Up Regulated
ytfL	948735	UPF0053 inner membrane protein ytfL		Temporarily Down Regulated
ytfM	948733	Uncharacterized protein ytfM	□	Up Regulated
msrA	948734	Peptide methionine sulfoxide reductase msrA		Ambiguous/Unsorted
gorB	948731	Uncharacterized oxidoreductase ytfG		Up Regulated
fdhE	948384	Protein fdhE		Down Regulated
ydjA	945964	Putative NAD(P)H nitroreductase ydjA		Ambiguous/Unsorted
yddB	945961	Uncharacterized protein yddB	["Cell wall membrane envelope biogenesis", "translation", "ion transport"]	Up Regulated

mitB	947184	Membrane-bound lytic murein transglycosylase B		Down Regulated
aIIb	945134	Allantoinase		Down Regulated
tus	945135	DNA replication terminus site-binding protein		Down Regulated
norR	947186	Anaerobic nitric oxide reductase transcription regulator norR		Temporarily Down Regula
kefA	945132	Potassium efflux system kefA		Ambiguous/Unsorted
pmrD	945130	Signal transduction protein pmrD		Temporarily Up Regulated
ytfN	948742	Uncharacterized protein ytfN	□	Down Regulated
fhlA	947181	Formate hydrogenlyase transcriptional activator		Ambiguous/Unsorted
ytfQ	948746	ABC transporter periplasmic-binding protein ytfQ		Up Regulated
ppa	948748	Inorganic pyrophosphatase		Ambiguous/Unsorted
ydeN	945957	Uncharacterized sulfatase ydeN	["Signal transduction mechanisms", "Metabolism of other compounds"]	Up Regulated
yihW	948381	Uncharacterized HTH-type transcriptional regulator yihW	["Transcription", "RNA related", "Type of regulation", "Genetic unit regulated", "transcription", "regulation of transcription DNA dependent"]	Temporarily Down Regula
yihX	948380	Phosphatase yihX		Up Regulated
fdhH	948395	Formate dehydrogenase-O iron-sulfur subunit		Down Regulated
ylbA	945149	Uncharacterized protein ylbA	["Carbon compound utilization", "proteolysis"]	Ambiguous/Unsorted
ydaL	945953	Uncharacterized protein ydaL	□	Up Regulated
clcB	947179	Voltage-gated CIC-type chloride channel clcB		Temporarily Down Regula
csrA	947176	Carbon storage regulator		Temporarily Up Regulated
fdhD	948393	Protein fdhD		Ambiguous/Unsorted
fdG	948394	Formate dehydrogenase-O major subunit		Down Regulated
dgt	947177	Deoxyguanosinetriphosphate triphosphohydrolase		Down Regulated
qseC	947174	Sensor protein qseC; Sensor protein		Down Regulated
xdhC	945148	Xanthine dehydrogenase iron-sulfur-binding subunit		Ambiguous/Unsorted
mppA	945951	Periplasmic murein peptide-binding protein		Up Regulated
ThiM	945142	Hydroxyethylthiazole kinase		Ambiguous/Unsorted
lpxM	945143	Lipid A biosynthesis (KDO)2-(lauroyl)-lipid IVA acyltransferase		Ambiguous/Unsorted
yniB	945140	Uncharacterized protein yniB	□	Up Regulated
yigA	948751	UPF0307 protein yigA		Up Regulated
nrdD	948755	Anaerobic ribonucleoside-triphosphate reductase		Temporarily Up Regulated
ydbH	945949	Uncharacterized protein ydbH	□	Down Regulated
ydhV	948756	Uncharacterized protein ydhV	["Central intermediary metabolism"]	Temporarily Up Regulated
fbp	948753	Fructose-1,6-bisphosphatase class 1		Ambiguous/Unsorted
yddA	945945	Inner membrane ABC transporter ATP-binding protein yddA		Ambiguous/Unsorted
uspF	945948	Universal stress protein F		Up Regulated
fre	948325	NAD(P)H-flavin reductase		Down Regulated
fadA	948324	3-ketoacyl-CoA thiolase		Up Regulated
raiA	947129	Ribosome-associated inhibitor A		Up Regulated
rfaH	948327	Transcriptional activator rfaH		Ambiguous/Unsorted
ubiD	948326	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Down Regulated
tatA	948321	Sec-independent protein translocase protein tatA		Down Regulated
ysgA	948320	Putative carboxymethylenebutenolidase		Up Regulated
patA	947120	Putrescine aminotransferase		Up Regulated
ubiB	948322	Probable ubiquinone biosynthesis protein ubiB		Down Regulated
nth	947122	Endonuclease III		Down Regulated
ybbP	945118	Uncharacterized ABC transporter permease ybbP		Up Regulated
ydgH	945117	Protein ydgH		Down Regulated
yglJ	948765	Uncharacterized oxidoreductase yglJ	□	Down Regulated
pyrB	948767	Aspartate carbamoyltransferase catalytic chain; Aspartate carbamoyltransferase		Ambiguous/Unsorted
treR	948760	HTH-type transcriptional regulator treR		Down Regulated
pyrl	948763	Aspartate carbamoyltransferase regulatory chain		Down Regulated
treC	948762	Trehalose-6-phosphate hydrolase		Ambiguous/Unsorted
xdhA	947116	Xanthine dehydrogenase molybdenum-binding subunit		Ambiguous/Unsorted
yigI	948338	Uncharacterized protein yigI	□	Down Regulated
ybbA	945122	Uncharacterized ABC transporter ATP-binding protein ybbA	□	Ambiguous/Unsorted
fadB	948336	Fatty acid oxidation complex subunit alpha		Up Regulated
pepQ	948335	Xaa-Pro dipeptidase		Ambiguous/Unsorted
queD	945123	Putative 6-pyruvoyl tetrahydrobiopterin synthase		Up Regulated
hemG	948331	Protoporphyrinogen oxidase		Ambiguous/Unsorted
ompW	945128	Outer membrane protein W		Up Regulated
tesA	945127	Acyl-CoA thioesterase I		Down Regulated
tabA	948777	Uncharacterized protein yigK		Down Regulated
yigL	948776	Uncharacterized protein yigL	["Type of regulation"]	Up Regulated
yigJ	948775	Uncharacterized HTH-type transcriptional regulator yigJ	["Cell wall membrane envelope biogenesis", "intracellular trafficking, secretion and vesicular transport", "Cell division", "protein transport"]	Down Regulated
argI	948774	Ornithine carbamoyltransferase chain I; Ornithine carbamoyltransferase		Down Regulated
rraB	948773	Uncharacterized protein yigD		Up Regulated
yigM	948772	Uncharacterized N-acetyltransferase yigM	□	Temporarily Up Regulated
uvrD	948347	DNA helicase II		Temporarily Down Regula
rdoA	948346	Protein rdoA		Temporarily Down Regula

mobA	948349	Molybdopterin-guanine dinucleotide biosynthesis protein A		Down Regulated
proV	947148	Glycine betaine/L-proline transport ATP-binding protein proV		Temporarily Down Regula
nrdF	947149	Ribonucleoside-diphosphate reductase 2 subunit beta		Up Regulated
ygaU	947144	Uncharacterized protein ygaU	□	Ambiguous/Unsorted
ygiS	947140	Putative binding protein ygiS		Up Regulated
alID	948342	Ureidoglycolate dehydrogenase		Temporarily Down Regula
holC	948787	DNA polymerase III subunit chi		Ambiguous/Unsorted
recE	945918	Exodeoxyribonuclease 8		Temporarily Down Regula
yccU	949008	Uncharacterized protein yccU	□	Up Regulated
fadE	949007	Acyl-coenzyme A dehydrogenase		Up Regulated
btuE	945915	Vitamin B12 transport periplasmic protein btuE; Glutathione peroxidase		Ambiguous/Unsorted
abgT	945912	Aminobenzoyl-glutamate transport protein		Ambiguous/Unsorted
rpsL	949000	30S ribosomal protein S9		Down Regulated
yigN	948784	Inner membrane protein yigN		Ambiguous/Unsorted
prfA	949002	Peptide chain release factor 1		Ambiguous/Unsorted
YigA	948359	Uncharacterized protein yigA		Temporarily Up Regulated
recR	945100	Recombination protein recR		Down Regulated
degP	947139	Protease do		Ambiguous/Unsorted
yihF	948352	Uncharacterized protein yihF	["Replication recombination and repair", "Adaptation to stress"]	Down Regulated
corA	948351	Magnesium transport protein corA		Temporarily Down Regula
yahE	947134	Uncharacterized protein yahE	□	Temporarily Up Regulated
dnaX	945105	DNA polymerase III subunit tau		Ambiguous/Unsorted
ydaN	945910	Zinc transport protein zntB		Ambiguous/Unsorted
ftsK	945102	DNA translocase ftsK		Down Regulated
polA	948356	DNA polymerase I		Ambiguous/Unsorted
dps	945101	DNA protection during starvation protein		Up Regulated
xerC	948355	Tyrosine recombinase xerC		Temporarily Up Regulated
stpA	947130	DNA-binding protein stpA		Ambiguous/Unsorted
ybaB	945104	UPF0133 protein ybaB		Ambiguous/Unsorted
dsbA	948353	Thiol:disulfide interchange protein dsbA		Up Regulated
ykgG	945906	UPF0707 protein ykgG		Up Regulated
fnr	945908	Fumarate and nitrate reduction regulatory protein		Down Regulated
uspE	945904	Universal stress protein E		Up Regulated
folK	948792	2-amino-4-hydroxy-6-hydroxymethylidihydropteridine pyrophosphokinase		Up Regulated
lptF	948795	Lipopolysaccharide export system permease protein lptF		Down Regulated
yeiT	949024	Uncharacterized response regulatory protein yeiT	["transcription", "regulation of transcription DNA dependent"]	Down Regulated
CARA	949025	Carbamoyl-phosphate synthase small chain		Ambiguous/Unsorted
yacL	944809	UPF0231 protein yacL		Up Regulated
yeoS	949026	Uncharacterized protein yeoS	["Replication recombination and repair"]	Temporarily Up Regulated
idi	949020	Isopentenyl-diphosphate Delta-isomerase		Ambiguous/Unsorted
ftsL	944803	Cell division protein ftsL		Down Regulated
fruR	944804	Fructose repressor		Temporarily Down Regula
mlrA	949029	HTH-type transcriptional regulator mlrA		Ambiguous/Unsorted
acpP	944805	Acyl carrier protein		Down Regulated
maeA	946031	NAD-dependent malic enzyme		Ambiguous/Unsorted
cfa	944811	Cyclopropane-fatty-acyl-phospholipid synthase		Temporarily Up Regulated
mraZ	944810	Protein mraZ		Up Regulated
fdnG	946035	Formate dehydrogenase, nitrate-inducible, major subunit		Down Regulated
hyfB	946961	Hydrogenase-4 component B		Temporarily Up Regulated
ydhF	946960	Oxidoreductase ydhF		Up Regulated
adhP	946036	Alcohol dehydrogenase, propanol-preferring		Up Regulated
ycgK	946963	Uncharacterized protein ycgK	□	Up Regulated
frsA	946039	Esterase frsA		Ambiguous/Unsorted
sufA	949014	Protein sufA		Up Regulated
ygfT	949018	Uncharacterized protein ygfT	["electron transport"]	Ambiguous/Unsorted
yncH	946024	Uncharacterized protein yncH	□	Ambiguous/Unsorted
ppx	946970	Exopolyphosphatase		Down Regulated
fucK	946022	L-fuculokinase		Ambiguous/Unsorted
yfgD	946974	Uncharacterized protein yfgD	□	Ambiguous/Unsorted
yqcC	946027	Uncharacterized protein yqcC	□	Ambiguous/Unsorted
rhsE	946026	ECDH10B_1586; EC55989_0238; b1456		Down Regulated
ybjX	946025	Uncharacterized protein ybjX	□	Down Regulated
hda	946977	DnaA-homolog protein hda		Down Regulated
cirA	949042	Colicin I receptor		Ambiguous/Unsorted
galS	949043	HTH-type transcriptional regulator galS		Up Regulated
yeiG	949045	S-formylglutathione hydrolase yeiG		Down Regulated
artQ	949046	Arginine transport system permease protein artQ		Ambiguous/Unsorted
waaA	949048	3-deoxy-D-manno-octulosonic-acid transferase		Down Regulated

gtl	946938	Glutamate/aspartate periplasmic-binding protein		Ambiguous/Unsorted
yeiT	949049	Uncharacterized oxidoreductase yeiT	[' Primary Active Transporters']	Temporarily Up Regulated
pdhR	944827	Pyruvate dehydrogenase complex repressor		Ambiguous/Unsorted
ftsQ	944823	Cell division protein ftsQ		Down Regulated
mutT	944824	Mutator mutT protein		Down Regulated
ydeP	946055	Protein ydeP		Down Regulated
yadG	944833	Uncharacterized ABC transporter ATP-binding protein yadG		Ambiguous/Unsorted
gnsB	946054	Protein gnsB		Temporarily Up Regulated
gadC	946057	Probable glutamate/gamma-aminobutyrate antiporter		Ambiguous/Unsorted
gcd	944830	Quinoprotein glucose dehydrogenase		Ambiguous/Unsorted
ygiW	946051	Protein ygiW		Temporarily Up Regulated
ydeQ	946050	Uncharacterized fimbrial-like protein ydeQ	□	Temporarily Up Regulated
tmcA	946053	Uncharacterized protein ypf1		Down Regulated
ddpA	946052	Probable D,D-dipeptide-binding periplasmic protein ddpA		Up Regulated
PqqL	946059	Probable zinc protease pqqL		Up Regulated
mglB	949041	D-galactose-binding periplasmic protein		Up Regulated
rpmB	946941	50S ribosomal protein L28		Down Regulated
eutD	946940	Ethanolamine utilization protein eutD		Down Regulated
ubiX	949033	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Ambiguous/Unsorted
leuO	949034	Probable HTH-type transcriptional regulator leuO		Up Regulated
narQ	946948	Nitrate/nitrite sensor protein narQ		Up Regulated
bcp	946949	Putative peroxiredoxin bcp		Temporarily Down Regula
ppiB	949038	Peptidyl-prolyl cis-trans isomerase B; Peptidyl-prolyl cis-trans isomerase		Up Regulated
thyA	949035	Thymidylate synthase		Down Regulated
mglA	949036	Galactose/methyl galactoside import ATP-binding protein mglA		Up Regulated
maeB	946947	NADP-dependent malic enzyme		Ambiguous/Unsorted
lpxC	944816	UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase		Ambiguous/Unsorted
Gpt	944817	Xanthine phosphoribosyltransferase		Ambiguous/Unsorted
murD	944818	UDP-N-acetylmuramoylalanine-D-glutamate ligase		Ambiguous/Unsorted
mglC	949039	Galactoside transport system permease protein mglC		Up Regulated
murF	944813	UDP-N-acetylmuramoyl-tripeptide-D-alanyl-D-alanine ligase		Ambiguous/Unsorted
wzzE	944815	Lipopolyssaccharide biosynthesis protein wzzE		Ambiguous/Unsorted
nhaB	944822	Na(+)/H(+) antipporter nhaB		Down Regulated
osmC	946043	Peroxiredoxin osmC		Up Regulated
ypfJ	946956	Uncharacterized protein ypfJ	□	Up Regulated
rnhA	946955	Ribonuclease HI; Ribonuclease H		Down Regulated
yffB	946953	Protein yffB		Ambiguous/Unsorted
argT	949030	Lysine-arginine-ornithine-binding periplasmic protein		Up Regulated
gcvR	946950	Glycine cleavage system transcriptional repressor		Ambiguous/Unsorted
ligT	944848	2'-5'-RNA ligase		Down Regulated
yadB	944846	Glutamyl-tRNA(Asp) synthetase; Insertion element IS150 uncharacterized 14 kDa protein		Temporarily Up Regulated
uxaC	947599	Uronate isomerase		Up Regulated
hrpB	944845	ATP-dependent RNA helicase hrpB		Ambiguous/Unsorted
ycgF	947592	Uncharacterized protein ycgF	['Signal transduction mechanisms', 'two component signal transduction system phosphorelay', 'regulation of transcription DNA dependent']	Temporarily Up Regulated
ygfK	949068	Uncharacterized protein ygfK		Temporarily Down Regula
rna	949065	Ribonuclease I		Temporarily Down Regula
fadH	947594	2,4-dienoyl-CoA reductase [NADPH]		Up Regulated
coaE	949060	Dephospho-CoA kinase		Ambiguous/Unsorted
dksA	944850	DnaK suppressor protein		Up Regulated
ydhQ	944851	Uncharacterized protein ydhQ	['Translation ribosomal structure and biogenesis', 'Adaptation to stress', 'translation']	Temporarily Down Regula
tam	946074	Trans-aconitate 2-methyltransferase		Up Regulated
HtpX	946076	Probable protease htpX		Down Regulated
sfsA	944855	Sugar fermentation stimulation protein A		Up Regulated
rnhB	944852	Ribonuclease HII		Down Regulated
yneJ	946079	Uncharacterized HTH-type transcriptional regulator yneJ	['Transcription', 'RNA related', 'Type of regulation', 'Genetic unit regulated', 'transcription', 'regulation of transcription DNA dependent']	Temporarily Down Regula
panB	944839	3-methyl-2-oxobutanoate hydroxymethyltransferase		Down Regulated
lpxB	944838	Lipid-A-disaccharide synthase		Temporarily Down Regula
rplU	949057	50S ribosomal protein L21		Temporarily Up Regulated
lrp	949051	Leucine-responsive regulatory protein		Ambiguous/Unsorted
cydD	949052	ATP-binding/permease protein cydD		Ambiguous/Unsorted
HypB	947194	Hydrogenase isoenzymes nickel incorporation protein hypB		Down Regulated
hipA	946064	Protein hipA		Temporarily Up Regulated
ygbK	947199	Uncharacterized protein ygbK	['Carbohydrate transport and metabolism']	Down Regulated
yadN	944841	Uncharacterized fimbrial-like protein yadN	[' Building block biosynthesis']	Ambiguous/Unsorted
ydeI	946068	Uncharacterized protein ydeI	['Signal transduction mechanisms', 'response to stress']	Up Regulated
hipB	946065	HTH-type transcriptional regulator hipB		Temporarily Up Regulated
ykgC	946092	Probable pyridine nucleotide-disulfide oxidoreductase ykgC		Ambiguous/Unsorted
ulaG	948705	Probable L-ascorbate-6-phosphate lactonase ulaG		Temporarily Up Regulated



























deoA	948901	Thymidine phosphorylase		Ambiguous/Unsorted
tolQ	948900	Protein tolQ		Down Regulated
yfcG	946763	Uncharacterized GST-like protein yfcG		Ambiguous/Unsorted
nuoA	946764	NADH-quinone oxidoreductase subunit; NADH-quinone oxidoreductase subunit A		Temporarily Down Regula
mutM	946765	Formamidopyrimidine-DNA glycosylase		Ambiguous/Unsorted
yfbU	946767	UPF0304 protein yfbU		Temporarily Down Regula
selD	946768	Selenide, water dikinase		Ambiguous/Unsorted
lrhA	946769	Probable HTH-type transcriptional regulator lrhA		Down Regulated
yicI	948169	Alpha-xylosidase		Ambiguous/Unsorted
yicJ	948168	Inner membrane symporter yicJ		Temporarily Down Regula
gltS	948166	Sodium/glutamate symport carrier protein		Temporarily Down Regula
ligB	948164	DNA ligase B		Ambiguous/Unsorted
rbn	946760	Ribonuclease Z		Down Regulated
gmk	948163	Guanylate kinase		Ambiguous/Unsorted
recG	948162	ATP-dependent DNA helicase recG		Down Regulated
nuoH	946761	NADH-quinone oxidoreductase subunit H		Down Regulated
trmH	948161	tRNA guanosine-2'-O-methyltransferase		Down Regulated
flik	946776	Flagellar regulator flik		Down Regulated
yfbT	946777	Phosphatase yfbT		Up Regulated
setC	948177	Sugar efflux transporter C		Ambiguous/Unsorted
yfbR	946771	UPF0207 protein yfbR; 5'-nucleotidase yfbR		Ambiguous/Unsorted
yfbQ	946772	Uncharacterized aminotransferase yfbQ	□	Down Regulated
yicN	948173	Uncharacterized protein yicN	["Carbon compound utilization", "regulation of transcription"]	Down Regulated
nlpA	948175	Lipoprotein 28		Down Regulated
yicH	948171	Uncharacterized protein yicH	["Energy production and conversion"]	Ambiguous/Unsorted
kdpD	946744	Sensor protein; Sensor protein kdpD		Up Regulated
nuoE	946746	NADH-quinone oxidoreductase subunit E		Ambiguous/Unsorted
yidJ	948188	Uncharacterized sulfatase yidJ	□	Down Regulated
ilvN	948183	Acetolactate synthase isozyme 1 small subunit		Ambiguous/Unsorted
nuoB	946738	NADH-quinone oxidoreductase subunit B		Down Regulated
nuoL	946757	NADH-quinone oxidoreductase subunit I		Temporarily Down Regula
elaB	946751	Protein elaB		Up Regulated
elaA	946750	Protein elaA		Temporarily Up Regulated
uhpB	948195	Sensor protein uhpB		Ambiguous/Unsorted
yidR	948198	Uncharacterized protein yidR	["Energy production and conversion", "electron transport"]	Temporarily Down Regula
yidQ	948199	Uncharacterized protein yidQ	□	Up Regulated
yidG	948191	Inner membrane protein yidG		Down Regulated
ibpB	948192	Small heat shock protein ibpB		Ambiguous/Unsorted
yfcF	946749	Uncharacterized GST-like protein yfcF		Up Regulated
srlB	948971	Glucitol/sorbitol-specific phosphotransferase enzyme II A component		Up Regulated
ybgJ	945311	Uncharacterized protein ybgJ	□	Ambiguous/Unsorted
sdhC	945316	Succinate dehydrogenase cytochrome b556 subunit		Ambiguous/Unsorted
atoE	946721	Short-chain fatty acids transporter		Temporarily Up Regulated
yigR	948978	Uncharacterized protein yigR	□	Up Regulated
menD	946720	2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase		Temporarily Down Regula
rffD	948977	UDP-N-acetyl-D-mannosamine dehydrogenase		Ambiguous/Unsorted
ypdA	946723	Inner membrane protein ypdA		Temporarily Down Regula
glpQ	946725	Glycerophosphoryl diester phosphodiesterase		Temporarily Up Regulated
acnA	946724	Aconitate hydratase 1		Up Regulated
hisJ	945309	Histidine-binding periplasmic protein		Ambiguous/Unsorted
gltA	945323	Citrate synthase		Ambiguous/Unsorted
lptG	945324	Lipopolyssacharide export system permease protein lptG		Up Regulated
tolR	945328	Protein tolR		Ambiguous/Unsorted
ybgE	945326	Uncharacterized protein ybgE	["Energy production and conversion", "Energy metabolism carbon", "Energy production transport", "electron transport"]	Up Regulated
ttcA	948967	tRNA 2-thiocytidine biosynthesis protein ttcA		Down Regulated
rmuC	948966	DNA recombination protein rmuC		Up Regulated
yeaP	948969	Probable diguanylate cyclase yeaP		Down Regulated
ygiQ	948963	UPF0313 protein ygiQ		Down Regulated
nei	945320	Endonuclease VIII; Endonuclease 8		Down Regulated
glpC	946735	Anaerobic glycerol-3-phosphate dehydrogenase subunit C		Down Regulated
menC	946734	o-succinylbenzoate synthase		Temporarily Down Regula
atoB	946727	Acetyl-CoA acetyltransferase		Temporarily Down Regula
yejG	945319	Uncharacterized protein yejG	□	Down Regulated
ybgL	945318	UPF0271 protein ybgL		Ambiguous/Unsorted
rscC	948993	Sensor kinase protein rscC; Sensor protein		Down Regulated
djlA	948992	DnaJ-like protein djlA		Temporarily Down Regula
yeiR	946701	Uncharacterized protein yeiR	□	Down Regulated
eco	946700	Ecotin		Up Regulated

cho	948996	Excinuclease cho		Temporarily Up Regulated
mgo	946702	Malate:quinone oxidoreductase; Probable malate:quinone oxidoreductase		Temporarily Up Regulated
csgE	945711	Curli production assembly/transport component csgE		Down Regulated
osmE	945305	Osmotically-inducible lipoprotein E		Up Regulated
rhsC	945306	Protein rhsC		Ambiguous/Unsorted
yccX	945304	Acylphosphatase		Up Regulated
borD	948980	Lipoprotein bor homolog from lambdoid prophage DLP12		Ambiguous/Unsorted
SdhB	945300	Succinate dehydrogenase iron-sulfur subunit		Ambiguous/Unsorted
hybD	948982	Hydrogenase 2 maturation protease		Temporarily Down Regula
ccmA	946714	Cytochrome c biogenesis ATP-binding export protein ccmA		Temporarily Down Regula
glpA	946713	Anaerobic glycerol-3-phosphate dehydrogenase subunit A		Up Regulated
menF	946712	Menaquinone-specific isochorismate synthase		Ambiguous/Unsorted
apbE	946711	Thiamine biosynthesis lipoprotein apbE		Up Regulated
guaC	948986	GMP reductase		Ambiguous/Unsorted
lolA	948989	Outer-membrane lipoprotein carrier protein		Up Regulated
betA	945716	Choline dehydrogenase		Down Regulated
yojI	946705	ABC transporter ATP-binding protein yojI		Temporarily Up Regulated
arcB	947887	Aerobic respiration control sensor protein arcB; Sensor protein		Down Regulated
friR	947885	HTH-type transcriptional regulator friR		Ambiguous/Unsorted
DHAR	945743	PTS-dependent dihydroxyacetone kinase operon regulatory protein		Up Regulated
map	947882	Methionine aminopeptidase		Ambiguous/Unsorted
minC	945744	Septum site-determining protein minC; Probable septum site-determining protein minC		Down Regulated
cysG	947880	Siroheme synthase		Down Regulated
minE	945740	Cell division topological specificity factor		Down Regulated
PabA	947873	Para-aminobenzoate synthase glutamine amidotransferase component II		Down Regulated
rpsB	947874	30S ribosomal protein S2		Ambiguous/Unsorted
friB	947875	Fructoselysine 6-phosphate deglycase		Temporarily Up Regulated
ycgE	945735	Uncharacterized HTH-type transcriptional regulator ycgE	0	Down Regulated
yhfG	947871	Uncharacterized protein yhfG	["Amino acid transport and metabolism", "protein folding", "amino acid biosynthetic process"]	Up Regulated
fic	947872	Cell filamentation protein fic		Up Regulated
rssA	945725	NTE family protein rssA		Ambiguous/Unsorted
ribA	945763	GTP cyclohydrolase-2		Down Regulated
clpA	945764	ATP-dependent Clp protease ATP-binding subunit clpA		Up Regulated
pth	945765	Peptidyl-tRNA hydrolase		Temporarily Down Regula
ycgV	945767	Uncharacterized protein ycgV	["Amino acid transport and metabolism", "Building block biosynthesis"]	Temporarily Up Regulated
gst	945758	Glutathione S-transferase		Ambiguous/Unsorted
gph	947895	Phosphoglycolate phosphatase		Ambiguous/Unsorted
rpe	947896	Ribulose-phosphate 3-epimerase		Ambiguous/Unsorted
dadA	945752	D-amino acid dehydrogenase small subunit		Down Regulated
sufB	945753	Protein sufB		Up Regulated
yhfW	947890	Uncharacterized protein yhfW	["Replication recombination and repair", "Carbon compound utilization"]	Ambiguous/Unsorted
btuD	945751	Vitamin B12 import ATP-binding protein btuD		Temporarily Down Regula
ldeA	945756	Muramoyltetrapeptide carboxypeptidase		Temporarily Down Regula
treA	945757	Periplasmic trehalase; Putative periplasmic trehalase		Up Regulated
dam	947893	DNA adenine methylase		Down Regulated
dadX	945754	Alanine racemase, catabolic; Alanine racemase		Up Regulated
cvaA	945755	Cell volume regulation protein A		Down Regulated
dhaM	945749	PTS-dependent dihydroxyacetone kinase, phosphotransferase subunit dhaM		Up Regulated
dhaL	945748	PTS-dependent dihydroxyacetone kinase, ADP-binding subunit dhaL		Up Regulated
dhaK	945747	PTS-dependent dihydroxyacetone kinase, dihydroxyacetone-binding subunit dhaK		Ambiguous/Unsorted
narX	945788	Nitrate/nitrite sensor protein narX		Down Regulated
clpB	947077	Chaperone protein clpB		Ambiguous/Unsorted
ychA	945784	Protein sirB1		Temporarily Down Regula
ydhS	945786	Uncharacterized protein ydhS	["Building block biosynthesis"]	Up Regulated
yeaC	947074	Uncharacterized protein yeaC	0	Temporarily Up Regulated
narG	945782	Respiratory nitrate reductase 1 alpha chain		Temporarily Down Regula
nudK	947072	GDP-mannose pyrophosphatase nudK		Ambiguous/Unsorted
prmC	945779	Protein methyltransferase hemK		Temporarily Up Regulated
nfsB	945778	Oxygen-insensitive NAD(P)H nitroreductase		Ambiguous/Unsorted
yfiH	947089	UPF0124 protein yfiH		Temporarily Up Regulated
hemA	945777	Glutamyl-tRNA reductase		Down Regulated
yqaB	945776	Phosphatase yqaB		Up Regulated
lolB	945775	Outer-membrane lipoprotein lolB		Ambiguous/Unsorted
aroF	947084	Phospho-2-dehydro-3-deoxyheptonate aldolase, Tyr-sensitive		Down Regulated
ispE	945774	4-diphosphocytidyl-2-C-methyl-D-erythritol kinase		Temporarily Up Regulated
agg	945773	Glucose-1-phosphatase		Up Regulated
rluD	947087	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase D		Ambiguous/Unsorted
cysB	945771	HTH-type transcriptional regulator cysB		Ambiguous/Unsorted

ybaK	947083	Uncharacterized protein ybaK		Up Regulated
uxuA	947082	Mannanote dehydratase		Up Regulated
ychF	945769	GTP-dependent nucleic acid-binding protein engD		Down Regulated
yegP	947095	UPF0339 protein yegP		Up Regulated
rplS	947096	50S ribosomal protein L19		Ambiguous/Unsorted
trmD	947099	tRNA (guanine-N(1)-)methyltransferase		Ambiguous/Unsorted
yfIB	947094	Putative lipoprotein yfIB		Down Regulated
narL	945795	Nitrate/nitrite response regulator protein narL		Temporarily Up Regulated
ychN	945794	Protein ychN		Ambiguous/Unsorted
rplE	947800	50S ribosomal protein L5		Ambiguous/Unsorted
rpsN	947801	30S ribosomal protein S14		Down Regulated
rpsH	947802	30S ribosomal protein S8		Down Regulated
ptrB	946358	Protease 2		Ambiguous/Unsorted
acpS	947037	Holo-[acyl-carrier-protein] synthase		Temporarily Up Regulated
yoaB	946357	UPF0076 protein yoaB		Up Regulated
yebE	946355	Inner membrane protein yebE		Ambiguous/Unsorted
pdxJ	947039	Pyridoxine 5'-phosphate synthase		Ambiguous/Unsorted
queC	947034	Queuosine biosynthesis protein queC		Down Regulated
thiC	948492	Thiamine biosynthesis protein thiC		Temporarily Down Regula
rnc	947033	Ribonuclease 3		Ambiguous/Unsorted
yebT	946352	Uncharacterized protein yebT	["Inorganic ion transport and metabolism"]	Down Regulated
era	947036	GTP-binding protein era; GTP-binding protein era homolog		Down Regulated
yebO	946350	Uncharacterized protein yebO	□	Up Regulated
yfhH	947030	Uncharacterized HTH-type transcriptional regulator yfhH	["Carbohydrate transport and metabolism"]	Ambiguous/Unsorted
rsd	948496	Regulator of sigma D		Temporarily Down Regula
hupA	948499	DNA-binding protein HU-alpha		Ambiguous/Unsorted
nudC	948498	NADH pyrophosphatase		Down Regulated
zapA	947404	Cell division protein zapA		Ambiguous/Unsorted
rpmI	946349	50S ribosomal protein L35		Down Regulated
rsmF	946348	Ribosomal RNA small subunit methyltransferase F		Down Regulated
exbD	946345	Biopolymer transport protein exbD		Down Regulated
dsbB	946344	Disulfide bond formation protein B		Temporarily Down Regula
nadB	947049	L-aspartate oxidase		Temporarily Up Regulated
yebV	946347	Uncharacterized protein yebV	["Replication recombination and repair"]	Up Regulated
yfiC	947047	ECED1_3006; c3099; E2348C_2852; ECIAI1_2689; APEC01_3956; ECS88_2749; ECDH10B_2743; ECUMN_2898; ECIAI39_2780; UTI89_C2897; EC55989_2864; pC15-1a_066; Z3857; b2575		Temporarily Down Regula
rplA	948483	50S ribosomal protein L1		Up Regulated
rlmA	946340	b1822		Ambiguous/Unsorted
yaeH	947044	UPF0325 protein yaeH		Up Regulated
manZ	946342	Mannose permease IID component		Ambiguous/Unsorted
bolA	947043	Protein bolA		Up Regulated
glrR	947042	Uncharacterized protein yfhA		Down Regulated
qseF	947042	Uncharacterized protein yfhA		Down Regulated
lepB	947040	Signal peptidase I		Ambiguous/Unsorted
epd	947413	D-erythrose-4-phosphate dehydrogenase		Down Regulated
mscS	947416	Small-conductance mechanosensitive channel		Ambiguous/Unsorted
rpoE	947050	RNA polymerase sigma factor; RNA polymerase sigma-E factor		Temporarily Up Regulated
yhcB	947815	Putative cytochrome d ubiquinol oxidase subunit 3		Down Regulated
rplC	947817	50S ribosomal protein L3		Temporarily Down Regula
rplW	947819	50S ribosomal protein L23		Up Regulated
yebC	946379	UPF0082 protein yebC		Ambiguous/Unsorted
pssA	947059	CDP-diacylglycerol-serine O-phosphatidyltransferase		Down Regulated
rplB	947820	50S ribosomal protein L2		Down Regulated
yhcM	947821	Uncharacterized protein yhcM	□	Ambiguous/Unsorted
rseC	947052	Sigma-E factor regulatory protein rseC		Down Regulated
etk	947409	Tyrosine-protein kinase etk		Temporarily Up Regulated
rvuB	946371	Holliday junction ATP-dependent DNA helicase rvuB		Down Regulated
rseB	947054	Sigma-E factor regulatory protein rseB		Down Regulated
rseA	947053	Sigma-E factor negative regulatory protein		Down Regulated
yfiQ	947056	Uncharacterized protein yfiQ	□	Up Regulated
znuA	946375	High-affinity zinc uptake system protein znuA		Up Regulated
yciH	947058	Uncharacterized protein yciH	["Translation ribosomal structure and biogenesis", 'translation']	Temporarily Up Regulated
znuC	946374	Zinc import ATP-binding protein znuC		Up Regulated
yfiP	947057	DTW domain-containing protein yfiP		Down Regulated
yebK	946373	HTH-type transcriptional regulator hexR		Up Regulated
ycfQ	947425	Uncharacterized HTH-type transcriptional regulator ycfQ	□	Up Regulated
nagE	945292	PTS system N-acetylglucosamine-specific EIICBA component		Up Regulated
yggU	947424	UPF0235 protein yggU		Temporarily Down Regula
ybfE	945291	Uncharacterized protein ybfE		Up Regulated



slyD	947859	FKBP-type peptidyl-prolyl cis-trans isomerase slyD		Ambiguous/Unsorted
kdpB	947450	Potassium-transporting ATPase B chain		Ambiguous/Unsorted
yggN	947453	Uncharacterized protein yggN	["Central intermediary metabolism"]	Temporarily Up Regulated
ansB	947454	L-asparaginase 2		Up Regulated
flgJ	947456	Peptidoglycan hydrolase flgJ		Down Regulated
speC	947457	Ornithine decarboxylase, constitutive		Ambiguous/Unsorted
yahA	947459	Cyclic di-GMP phosphodiesterase yahA		Temporarily Up Regulated
yfhG	947010	Uncharacterized protein yfhG	"Amino acid transport and metabolism", "Building block biosynthesis", "RNA related", "Type of regulation", "transcription", "regulation of transcription"	Temporarily Down Regulated
ycdX	948477	Putative hydrolase ycdX		Down Regulated
sdaA	946331	L-serine dehydratase 1		Up Regulated
nlpD	947011	Lipoprotein nlpD		Up Regulated
murB	948470	UDP-N-acetylenolpyruvylglucosamine reductase		Ambiguous/Unsorted
manY	946332	Mannose permease IIC component		Down Regulated
yacC	948472	Uncharacterized protein yacC	["Amino acid transport and metabolism"]	Down Regulated
argR	947861	Arginine repressor		Down Regulated
qseE	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Temporarily Up Regulated
girK	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Temporarily Up Regulated
yhfA	947860	Protein yhfA		Ambiguous/Unsorted
yebY	947014	Uncharacterized protein yebY	["translation"]	Ambiguous/Unsorted
yoaE	946335	UPF0053 inner membrane protein yoaE		Up Regulated
prkB	947862	Probable phosphoribulokinase; Phosphoribulokinase		Up Regulated
pepT	946333	Peptidase T		Up Regulated
degS	947865	Protease degS		Up Regulated
manX	946334	PTS system mannose-specific EIIB component		Ambiguous/Unsorted
hmp	947018	Flavohemoprotein		Down Regulated
cspC	946339	Cold shock-like protein cspC		Down Regulated
yphC	947019	Uncharacterized zinc-type alcohol dehydrogenase-like protein yphC	["Carbon compound utilization", "Energy metabolism carbon"]	Ambiguous/Unsorted
crp	947867	Catabolite gene activator		Down Regulated
yhfK	947866	Uncharacterized protein yhfK	["Signal transduction mechanisms", "tricarboxylic acid cycle"]	Temporarily Down Regulated
pabB	946337	Para-aminobenzoate synthase component 1		Ambiguous/Unsorted
ascB	947460	6-phospho-beta-glucosidase ascB		Ambiguous/Unsorted
yggX	947461	Probable Fe(2+)-trafficking protein		Up Regulated
yeaU	946319	Probable tartrate dehydrogenase/decarboxylase		Up Regulated
dmlA	946319	Probable tartrate dehydrogenase/decarboxylase		Up Regulated
yhdH	947848	Putative quinone oxidoreductase yhdH		Ambiguous/Unsorted
slyX	947849	Protein slyX		Up Regulated
leuA	947465	2-isopropylmalate synthase		Ambiguous/Unsorted
yphG	947021	Uncharacterized protein yphG	["Carbon compound utilization", "carbohydrate transport"]	Up Regulated
cspE	947024	Cold shock-like protein cspE		Down Regulated
oxyR	948462	Hydrogen peroxide-inducible genes activator		Ambiguous/Unsorted
fabR	948460	HTH-type transcriptional repressor fabR		Ambiguous/Unsorted
murG	946321	UDP-N-acetylglucosamine--N-acetylmuramyl-(pentapeptide) pyrophosphoryl-undecaprenol N-acetylglucosamine transferase		Ambiguous/Unsorted
yphH	947023	Uncharacterized protein yphH	["Carbohydrate transport and metabolism", "Transcription", "carbohydrate metabolic process"]	Ambiguous/Unsorted
potA	946323	Spermidine/putrescine import ATP-binding protein potA		Down Regulated
yheM	947853	Protein tusC		Temporarily Down Regulated
yfgC	947029	TPR repeat-containing protein yfgC		Ambiguous/Unsorted
ddIB	946324	D-alanine--D-alanine ligase B		Down Regulated
yfhB	947026	Uncharacterized protein yfhB	["Nucleotide transport and metabolism"]	Down Regulated
tadA	947027	tRNA-specific adenosine deaminase		Down Regulated
yheO	947851	Uncharacterized protein yheO	["protein folding"]	Down Regulated
phoQ	946326	Sensor protein phoQ; Sensor protein		Down Regulated
birA	948469	Bifunctional protein birA		Temporarily Up Regulated
kefB	947858	Glutathione-regulated potassium-efflux system protein kefB		Temporarily Down Regulated
kefG	947857	Glutathione-regulated potassium-efflux system ancillary protein kefG		Up Regulated
Fadd	946327	Long-chain-fatty-acid-CoA ligase		Up Regulated
rnd	946328	Ribonuclease D		Down Regulated
murl	948467	Glutamate racemase		Down Regulated
yheS	947856	Uncharacterized ABC transporter ATP-binding protein yheS		Ambiguous/Unsorted
yheT	947855	Putative esterase yheT		Temporarily Up Regulated

Common Name	Entrez ID	Gene Name	Prediction	Sorted Category
yeK	948662	Uncharacterized kamA family protein yek	['metabolic process']	Down Regulated
dxr	945019	1-deoxy-D-xylulose 5-phosphate reductoisomerase		Temporarily Down Regulated
groL	948665	60 kDa chaperonin		Down Regulated
ribF	949129	Riboflavin biosynthesis protein ribF		Down Regulated
kch	945841	Putative potassium channel protein		Down Regulated
ydhB	945208	Uncharacterized HTH-type transcriptional regulator ydhB	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
fepG	945209	Ferric enterobactin transport system permease protein fepG		Ambiguous/Unsorted
ybaA	948863	Uncharacterized protein ybaA	[]	Up Regulated
ydcl	948865	Uncharacterized HTH-type transcriptional regulator ydcl	['Transcription', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
btuR	945839	Cob(I)yrinic acid a,c-diamide adenosyltransferase		Down Regulated
hsdS	948867	Type-1 restriction enzyme EcoKI specificity protein		Temporarily Down Regulated
yciK	945838	Uncharacterized oxidoreductase yciK	['DNA repair', 'response to DNA damage stimulus']	Ambiguous/Unsorted
creD	948868	Inner membrane protein creD		Ambiguous/Unsorted
cstA	945213	Carbon starvation protein A		Ambiguous/Unsorted
rbsK	948260	Ribokinase		Down Regulated
ychE	945836	UPF0056 membrane protein yhcE		Temporarily Down Regulated
yjiN	948860	Uncharacterized protein yjiN	['response to antibiotic']	Up Regulated
sugE	948671	Quaternary ammonium compound-resistance protein sugE		Down Regulated
tauD	945021	Alpha-ketoglutarate-dependent taurine dioxygenase		Down Regulated
dinI	945022	DNA-damage-inducible protein I		Temporarily Up Regulated
rcsF	949113	Protein rcsF		Down Regulated
yaeB	949112	UPF0066 protein yaeB		Ambiguous/Unsorted
psd	948673	Phosphatidylserine decarboxylase proenzyme		Ambiguous/Unsorted
poxA	948672	Putative lysyl-tRNA synthetase		Up Regulated
abgR	945831	HTH-type transcriptional regulator abgR		Ambiguous/Unsorted
yqeG	945028	Inner membrane transport protein yqeG		Ambiguous/Unsorted
yhbV	949117	Uncharacterized protein yhbV	['Coenzyme transport and metabolism', ' Energy metabolism carbon ', ' Building block biosynthesis', 'ion transport', 'iron ion transpo	Up Regulated
yneM	948679	Inner membrane transporter yneM		Up Regulated
yeL	948272	Uncharacterized protein yel	['Carbohydrate transport and metabolism']	Up Regulated
yneP	948676	Uncharacterized mscS family protein yneP	['purine nucleotide biosynthetic process', 'biosynthetic process']	Down Regulated
iilE	948278	Branched-chain-amino-acid aminotransferase		Down Regulated
iilM	948279	Acetylactate synthase isozyme 2 small subunit		Down Regulated
tauC	945026	Taurine transport system permease protein tauC		Down Regulated
tauB	945027	Taurine import ATP-binding protein tauB		Down Regulated
iilD	948277	Dihydroxy-acid dehydratase		Down Regulated
oppA	945830	Periplasmic oligopeptide-binding protein		Down Regulated
thrB	947498	Homoserine kinase		Down Regulated
ylaC	948876	Inner membrane protein ylaC		Up Regulated
ampD	948877	1,6-anhydro-N-acetylmuramyl-L-alanine amidase ampD		Ambiguous/Unsorted
leuS	947497	Leucyl-tRNA synthetase		Temporarily Down Regulated
dkgA	947495	2,5-diketo-D-gluconic acid reductase A		Temporarily Up Regulated
tatE	945228	Sec-independent protein translocase protein tatE		Down Regulated
marR	945825	Multiple antibiotic resistance protein marR		Up Regulated
ybgl	945824	UPF0135 protein ybgl		Ambiguous/Unsorted
dacA	945222	D-alanyl-D-alanine carboxypeptidase dacA		Down Regulated
ahpC	945225	Alkyl hydroperoxide reductase subunit C		Temporarily Up Regulated
yqhC	947491	Uncharacterized HTH-type transcriptional regulator yqhC	[' RNA related', ' Type of regulation', ' Genetic unit regulated', ' Protection', 'regulation of transcription DNA dependent']	Up Regulated
dsbG	945224	Thiol:disulfide interchange protein dsbG		Down Regulated
yjl	948879	Inner membrane transport protein yjl		Up Regulated
ybeD	945220	UPF0250 protein ybeD		Ambiguous/Unsorted
hsdM	948872	Type I restriction enzyme EcoKI M protein		Down Regulated
fecR	949104	Protein fecR		Ambiguous/Unsorted
tauA	945030	Taurine-binding periplasmic protein		Down Regulated
dsdX	949103	DsdX permease		Up Regulated
fumB	948642	Fumarate hydratase class I, anaerobic		Up Regulated
yail	945033	UPF0178 protein yail		Down Regulated
atpF	948247	ATP synthase subunit b; ATP synthase B chain		Down Regulated
mmMG	948248	tRNA uridine 5-carboxymethylaminomethyl modification enzyme mmMG		Ambiguous/Unsorted
atpG	948243	ATP synthase gamma chain		Down Regulated
atpD	948244	ATP synthase subunit beta		Down Regulated
ptrA	947284	Protease 3		Temporarily Down Regulated
atpC	948245	ATP synthase epsilon chain		Down Regulated
glmU	948246	Bifunctional protein glmU		Down Regulated
recB	947286	Exodeoxyribonuclease V beta chain		Down Regulated

ynfH	945822	Anaerobic dimethyl sulfoxide reductase chain ynfH		Down Regulated
RecD	947287	Exodeoxyribonuclease V alpha chain		Down Regulated
oppB	945823	Oligopeptide transport system permease protein oppB		Down Regulated
fimA	948838	Type-1 fimbrial protein, A chain		Up Regulated
nanM	949106	N-acetylneuraminate epimerase		Up Regulated
glmS	948241	Glucosamine-fructose-6-phosphate aminotransferase [isomerizing]		Down Regulated
argA	947289	Amino-acid acetyltransferase		Down Regulated
atpA	948242	ATP synthase subunit alpha		Down Regulated
Dos	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Temporarily Up Regul
dosP	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Temporarily Up Regul
gpr	947480	Uncharacterized protein yghZ		Temporarily Up Regul
yghZ	947480	Uncharacterized protein yghZ		Temporarily Up Regul
fimH	948847	Protein fimH		Temporarily Down Reg
ygiT	945814	Uncharacterized HTH-type transcriptional regulator ygiT	['Carbon compound utilization', 'metabolic process']	Up Regulated
mqsA	945814	Uncharacterized HTH-type transcriptional regulator ygiT		Up Regulated
gntP	948848	High-affinity gluconate transporter		Up Regulated
flgD	945813	Basal-body rod modification protein flgD		Down Regulated
rfbC	947482	dTDP-4-dehydrorhamnose 3,5-epimerase		Down Regulated
yfdY	948842	Uncharacterized protein yfdY	[]	Up Regulated
uidB	947484	ECIAI39_1442; EcHS_A1691; APEC01_699; b1616; ECDH10B_1749; c2008; UTI89_C1804; EcSMS35_1583; EcE24377A_1824; Z2620; ECS88_1662; ECED1_1815; ECUMN_1905; ECH7	Up Regulated	Up Regulated
yciU	945819	UPF0263 protein yciU		Down Regulated
rlmH	945239	Ribosomal RNA large subunit methyltransferase H		Temporarily Down Reg
mrdB	945238	Rod shape-determining protein rodA		Down Regulated
flhC	947280	Flagellar transcriptional activator flhC		Temporarily Up Regul
ybeB	945237	Uncharacterized protein ybeB	[]	Down Regulated
sgcX	948840	Putative sgc region protein sgcX		Up Regulated
fadR	948652	Fatty acid metabolism regulator protein		Down Regulated
psfF	945040	Phosphate starvation-inducible protein psfF		Up Regulated
ygdD	947279	UPF0382 inner membrane protein ygdD		Temporarily Up Regul
yjdC	948650	HTH-type transcriptional regulator yjdC		Temporarily Up Regul
phoR	945044	Sensor protein; Phosphate regulon sensor protein phoR		Temporarily Down Reg
aroM	945045	Protein aroM		Temporarily Down Reg
asnC	948259	Asparaginyl-tRNA synthetase; Regulatory protein asnC		Down Regulated
fucO	947273	Lactaldehyde reductase		Temporarily Up Regul
csdE	947274	Uncharacterized sufE-like protein ygdK		Ambiguous/Unsorted
yaiE	945048	UPF0345 protein yaiE		Down Regulated
atpH	948254	ATP synthase subunit delta		Down Regulated
aspA	948658	Aspartate ammonia-lyase		Temporarily Up Regul
atpB	948252	ATP synthase subunit a		Down Regulated
fxsA	948657	UPF0716 protein fxsA		Temporarily Up Regul
yjeH	948656	Inner membrane protein yjeH		Down Regulated
atpE	948253	ATP synthase subunit c		Down Regulated
oppC	945810	Oligopeptide transport system permease protein oppC		Down Regulated
rsmG	948250	Ribosomal RNA small subunit methyltransferase G		Down Regulated
groS	948655	10 kDa chaperonin		Down Regulated
uxuR	948849	Uxu operon transcriptional regulator		Ambiguous/Unsorted
thrA	945803	Bifunctional aspartokinase/homoserine dehydrogenase 1		Temporarily Up Regul
oppD	945802	Oligopeptide transport ATP-binding protein oppD		Down Regulated
holE	947471	DNA polymerase III subunit theta		Temporarily Down Reg
nadD	945248	Nicotinate-nucleotide adenylyltransferase; Probable nicotinate-nucleotide adenylyltransferase		Down Regulated
gss	947474	Bifunctional glutathionylspermidine synthetase/amidase		Temporarily Down Reg
gsp	947474	Bifunctional glutathionylspermidine synthetase/amidase		Temporarily Down Reg
yjiE	948852	Uncharacterized HTH-type transcriptional regulator yjiE	['Transcription', 'RNA related', 'Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Ambiguous/Unsorted
glcG	947473	Protein glcG		Temporarily Up Regul
yqhA	947479	UPF0114 protein yqhA		Down Regulated
rlpA	945241	Rare lipoprotein A		Down Regulated
mrdA	945240	Penicillin-binding protein 2		Down Regulated
ygdH	947266	UPF0717 protein ygdH		Down Regulated
gudX	947261	Glucarate dehydratase-related protein		Up Regulated
rumB	947260	23S rRNA (uracil-5-)methyltransferase rumB		Temporarily Down Reg
wrbA	947263	Flavoprotein wrbA; Putative flavoprotein wrbA		Temporarily Up Regul
yieE	948226	Uncharacterized protein yieE	['Amino acid transport and metabolism']	Temporarily Down Reg
yieF	948225	Uncharacterized protein yieF		Temporarily Down Reg
ygbE	947268	Inner membrane protein ygbE		Down Regulated
gadA	948027	Glutamate decarboxylase alpha		Up Regulated

djIC	945253	Uncharacterized J domain-containing protein djIC		Up Regulated
fhuC	945250	Iron(3+)-hydroxamate import ATP-binding protein fhuC		Temporarily Up Regul
serA	945258	D-3-phosphoglycerate dehydrogenase		Down Regulated
adiA	948638	Biodegradative arginine decarboxylase		Up Regulated
dcuS	948639	Sensor protein dcuS		Temporarily Down Re
phoU	948233	Phosphate transport system protein phoU		Down Regulated
melR	948637	Melibiose operon regulatory protein		Up Regulated
glcA	947259	Glycolate permease glcA		Temporarily Up Regul
yhjA	948038	Probable cytochrome c peroxidase		Up Regulated
miaB	945260	(Dimethylallyl)adenosine tRNA methylthiotransferase miaB		Down Regulated
ubif	945261	2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase		Up Regulated
yhjE	948032	Inner membrane metabolite transport protein yhjE		Temporarily Up Regul
yhjD	948033	Inner membrane protein yhjD		Temporarily Up Regul
eptA	948629	ECIA1_4344; E2348C_4442; ECUMN_4646; ECS88_4616; b4114; ECED1_4848; ECIA139_4538; EC55989_4605; ECDH10B_4306		Ambiguous/Unsorted
yhjC	948035	Uncharacterized HTH-type transcriptional regulator yhjC	["Transcription", " RNA related", " Type of regulation", "transcription", "regulation of transcription DNA dependent"]	Up Regulated
ibpA	948200	Small heat shock protein ibpA		Up Regulated
yecJ	946388	Uncharacterized protein yecJ	[]	Down Regulated
yidX	948202	Uncharacterized protein yidX	[" Type of regulation", "proteolysis", "signal transduction"]	Up Regulated
CYBB	947241	Cytochrome b561		Down Regulated
torZ	946389	Trimethylamine-N-oxide reductase 2		Ambiguous/Unsorted
rumA	947243	23S rRNA (uracil-5-)methyltransferase rumA		Temporarily Down Re
nudB	946383	Dihydronoopterin triphosphate pyrophosphatase		Down Regulated
recF	948209	DNA replication and repair protein recF		Temporarily Down Re
ycrR	946386	Uncharacterized protein ycrR	["Inorganic ion transport and metabolism", " Adaptation to stress", "iron ion transport"]	Down Regulated
cmoB	946387	tRNA (mo5U34)-methyltransferase		Down Regulated
pgm	945271	Phosphoglucomutase		Ambiguous/Unsorted
pitA	948009	Low-affinity inorganic phosphate transporter 1		Down Regulated
seqA	945272	Protein seqA		Temporarily Down Re
tsr	948884	Methyl-accepting chemotaxis protein I		Up Regulated
yhiQ	948005	UPF0341 protein yhiQ		Temporarily Up Regul
rbfB	945276	dTDP-glucose 4,6-dehydratase		Down Regulated
erfK	945273	Protein erfK/srfK		Temporarily Up Regul
uspA	948007	Universal stress protein A		Up Regulated
yhil	948003	Uncharacterized protein yhil	[" Protection"]	Up Regulated
yahB	945278	Uncharacterized HTH-type transcriptional regulator yahB	["Transcription", " RNA related", " Type of regulation", "transcription", "regulation of transcription DNA dependent"]	Temporarily Down Re
cusR	945003	Transcriptional regulatory protein cusR		Down Regulated
yael	945002	Phosphodiesterase yael		Down Regulated
opgG	945005	Glucans biosynthesis protein G		Down Regulated
gyrB	948211	DNA gyrase subunit B		Down Regulated
pal	945004	Peptidoglycan-associated lipoprotein		Down Regulated
lacI	945007	Lactose operon repressor		Up Regulated
trmJ	948610	tRNA (cytidine/uridine-2'-O-)methyltransferase trmJ		Temporarily Down Re
cysI	947231	Sulfite reductase [NADPH] hemoprotein beta-component		Down Regulated
hisQ	947235	Histidine transport system permease protein hisQ		Down Regulated
dnaN	948218	DNA polymerase III subunit beta		Down Regulated
dnaA	948217	Chromosomal replication initiator protein dnaA		Down Regulated
rpmH	948216	50S ribosomal protein L34		Down Regulated
yidC	948214	Inner membrane protein oxaA		Down Regulated
osmY	948895	Osmotically-inducible protein Y		Temporarily Up Regul
asnB	945281	Asparagine synthetase B [glutamine-hydrolyzing]		Down Regulated
fhuF	948891	Ferric iron reductase protein fhuF		Temporarily Up Regul
flhA	946390	Flagellar biosynthesis protein flhA		Down Regulated
ybfF	945288	Esterase ybfF		Ambiguous/Unsorted
nagA	945289	N-acetylglucosamine-6-phosphate deacetylase		Ambiguous/Unsorted
yjjG	948899	5'-nucleotidase yjjG		Temporarily Down Re
mrr	948898	Mrr restriction system protein		Temporarily Up Regul
prfC	948897	Peptide chain release factor 3		Down Regulated
yhjX	948066	Inner membrane protein yhjX		Up Regulated
dppC	948064	Dipeptide transport system permease protein dppC		Down Regulated
valV	946170	c5541; Z2692; UT189_C1856; ECDH10B_1799; b1665; E2348C_tRNA31; ECs5461		Temporarily Down Re
eptB	948068	b3546; ECS88_3965; ECIA139_4054; EC55989_3997; E2348C_3793; ECED1_4224; ECUMN_4058; ECDH10B_3725; ECIA1_3705		Temporarily Down Re
yfeA	946864	Uncharacterized protein yfeA	["Signal transduction mechanisms", " Type of regulation", "two component signal transduction system phosphorelay", "regulation of t	Temporarily Down Re
pykF	946179	Pyruvate kinase I; Pyruvate kinase		Temporarily Up Regul
glk	946858	Glucokinase		Up Regulated
lpp	946175	Major outer membrane lipoprotein		Down Regulated

ydhR	946177	Putative monooxygenase ydhR		Down Regulated
ydgA	946172	Protein ydgA		Temporarily Up Regul
ynhG	946174	Uncharacterized protein ynhG	□	Temporarily Up Regul
sufE	946173	Cysteine desulfurization protein sufE		Temporarily Up Regul
gabD	948060	Succinate-semialdehyde dehydrogenase [NADP+]		Temporarily Up Regul
yiaD	948075	Inner membrane lipoprotein yiaD		Temporarily Up Regul
glyQ	948079	Glycyl-tRNA synthetase alpha subunit		Down Regulated
yiaA	948078	Inner membrane protein yiaA		Up Regulated
ptsl	946879	Phosphoenolpyruvate-protein phosphotransferase		Down Regulated
yfeK	946876	Uncharacterized protein yfeK	["Defense mechanisms", "Primary Active Transporters", "Protection"]	Up Regulated
cysK	946877	Cysteine synthase A; Cysteine synthase		Down Regulated
ydhL	946168	Uncharacterized protein ydhL	["Metabolism of other compounds", "purine nucleotide biosynthetic process"]	Up Regulated
plsX	946165	Fatty acid/phospholipid synthesis protein plsX		Down Regulated
nemA	946164	N-ethylmaleimide reductase		Ambiguous/Unsorted
pdxY	946162	Pyridoxamine kinase		Down Regulated
yiaG	948071	Uncharacterized HTH-type transcriptional regulator yiaG	["RNA related", "Type of regulation", "Adaptation to stress", "transcription", "regulation of transcription DNA dependent", "response to environmental stimuli", "transcriptional regulation"]	Temporarily Up Regul
yiaF	948072	Uncharacterized protein yiaF	["Carbohydrate transport and metabolism", "Carbon compound utilization", "phosphoenolpyruvate dependent sugar phosphotransferase system", "carbohydrate metabolism"]	Down Regulated
yhjK	948048	c4341; EC55989_3976; ECDH10B_3706; APEC01_2919; ECIAI1_3680; b3529; ECIAI39_4032; ECED1_4207; ECS88_3943; ECUMN_4036; UTI89_C4061; Z4943; E2348C_3771		Ambiguous/Unsorted
bcsZ	948046	Endogluconase		Down Regulated
bcsB	948045	Cyclic di-GMP-binding protein		Down Regulated
ybeZ	948044	PhoH-like protein		Temporarily Up Regul
pdxK	946881	Pyridoxine kinase		Up Regulated
kdgK	948041	2-dehydro-3-deoxygluconokinase		Temporarily Up Regul
cysU	946882	Sulfate transport system permease protein cysT		Down Regulated
cysP	946883	Thiosulfate-binding protein		Down Regulated
ptsH	946886	Phosphocarrier protein HP		Down Regulated
yfeS	946887	Uncharacterized protein yfeS	□	Down Regulated
cysM	946888	Cysteine synthase B; Cysteine synthase		Down Regulated
rsxG	946158	Electron transport complex protein rnfG		Down Regulated
leuE	946157	Leucine efflux protein		Down Regulated
yhjJ	948040	Protein yhjJ		Down Regulated
hdhA	946151	7-alpha-hydroxysteroid dehydrogenase		Temporarily Up Regul
murC	946153	UDP-N-acetylmuramate-L-alanine ligase		Down Regulated
yhjV	948057	Inner membrane transport protein yhjV		Temporarily Down Regul
csiR	948055	Uncharacterized HTH-type transcriptional regulator ygaE		Ambiguous/Unsorted
prpE	946891	Propionate-CoA ligase		Up Regulated
cyoC	946897	Cytochrome o ubiquinol oxidase subunit 3		Down Regulated
mntH	946899	Manganese transport protein mntH		Up Regulated
uidA	946149	Beta-glucuronidase		Up Regulated
rsxB	946146	Electron transport complex protein rnfB		Temporarily Down Regul
topB	946141	DNA topoisomerase 3		Down Regulated
pntB	946144	NAD(P) transhydrogenase subunit beta		Down Regulated
tqsA	946142	AI-2 transport protein tqsA		Temporarily Down Regul
fadL	946820	Long-chain fatty acid transport protein		Temporarily Up Regul
fecE	948819	Fe(3+) dicitrate transport ATP-binding protein fecE		Down Regulated
dnaJ	944753	Chaperone protein dnaJ		Down Regulated
dnaK	944750	Chaperone protein dnaK		Temporarily Up Regul
aroC	946814	Chorismate synthase		Down Regulated
sixA	946815	Phosphohistidine phosphatase sixA		Up Regulated
fecD	946816	Fe(3+) dicitrate transport system permease protein fecD		Down Regulated
insB	944743	Insertion element IS1 2/3 protein insB; Insertion element IS1 2/3/4 protein insA; Insertion element IS1 protein insA; Insertion element IS1 4 protein insB; Insertion element IS1 1/5/6 protein insE		Ambiguous/Unsorted
sspA	944744	Stringent starvation protein A		Down Regulated
nfrA	944741	Bacteriophage N4 adsorption protein A		Ambiguous/Unsorted
efeO	945603	UPF0409 protein ycdO		Temporarily Up Regul
putP	945602	Sodium/proline symporter		Down Regulated
yceA	945601	UPF0176 protein yceA		Down Regulated
ypfG	946828	Uncharacterized protein ypfG	["Transcription", "RNA related", "Type of regulation", "transcription", "regulation of transcription DNA dependent"]	Temporarily Down Regul
evgS	946844	Sensor protein evgS; Sensor protein		Temporarily Down Regul
BAX	948089	Protein bax		Temporarily Down Regul
ydil	946190	Esterase ydil		Down Regulated
maiS	948088	Alpha-amylase		Down Regulated
sapB	946191	Peptide transport system permease protein sapB		Temporarily Up Regul
xylR	948086	Xylose operon regulatory protein		Up Regulated
ygcE	946193	Uncharacterized sugar kinase ygcE	["Central intermediary metabolism", "carbohydrate metabolic process"]	Temporarily Up Regul
yiaJ	948084	HTH-type transcriptional regulator yiaJ		Ambiguous/Unsorted

ydiH	946194	Uncharacterized protein ydiH	['proteolysis']	Temporarily Down Regulated
trxA	948289	Thioredoxin-1		Temporarily Down Regulated
yafE	946197	Uncharacterized protein yafE	['Amino acid transport and metabolism', 'Building block biosynthesis', 'amino acid biosynthetic process']	Ambiguous/Unsorted
glyS	948080	Glycyl-tRNA synthetase beta subunit		Down Regulated
ilvY	948284	HTH-type transcriptional regulator ilvY		Temporarily Down Regulated
rstA	946199	Transcriptional regulatory protein rstA		Down Regulated
ilvL	948283	IlvGMDA operon leader peptide		Temporarily Up Regulated
dsdA	946837	D-serine dehydratase; D-serine dehydratase 1		Ambiguous/Unsorted
fecB	946838	Fe(3+) diclitate-binding periplasmic protein		Temporarily Up Regulated
fecl	946839	Probable RNA polymerase sigma factor fecl; RNA polymerase sigma factor		Up Regulated
yjhP	946851	Uncharacterized protein yjhP	['Replication recombination and repair']	Up Regulated
yfcC	946857	Uncharacterized protein yfcC	[]	Up Regulated
ypeC	946855	Uncharacterized protein ypeC	['Energy production and conversion']	Temporarily Up Regulated
rhlB	948290	ATP-dependent RNA helicase rhlB		Down Regulated
gpp	948291	Guanosine-5'-triphosphate,3'-diphosphate pyrophosphatase		Down Regulated
yjiP	948812	Inner membrane protein yjiP		Ambiguous/Unsorted
rep	948292	ATP-dependent DNA helicase rep		Down Regulated
wzyE	948293	Putative ECA polymerase		Down Regulated
ydhZ	946180	Uncharacterized protein ydhZ	[]	Temporarily Up Regulated
rffH	948299	Glucose-1-phosphate thymidylyltransferase; Glucose-1-phosphate thymidylyltransferase 2		Down Regulated
sufS	946185	Cysteine desulfurase		Temporarily Up Regulated
ydiK	946183	UPF0118 inner membrane protein ydiK		Ambiguous/Unsorted
insG	948805	Transposase insG for insertion sequence element IS4		Up Regulated
yneE	946188	UPF0187 protein yneE		Down Regulated
wzxE	948294	Protein wzxE		Down Regulated
hyi	946186	Hydroxypyruvate isomerase		Ambiguous/Unsorted
yjhB	948807	Putative metabolite transport protein yjhB		Up Regulated
rffA	948296	Lipopolysaccharide biosynthesis protein rffA		Down Regulated
lpcA	949134	Phosphoheptose isomerase		Ambiguous/Unsorted
acpH	949132	Acy carrier protein phosphodiesterase		Up Regulated
secD	949133	Protein-export membrane protein secD		Down Regulated
tgt	949130	Queuine tRNA-ribosyltransferase		Down Regulated
malZ	949131	Maltodextrin glucosidase		Down Regulated
puuA	946202	Gamma-glutamylputrescine synthetase		Down Regulated
trpA	946204	Tryptophan synthase alpha chain		Down Regulated
leuD	945642	3-isopropylmalate dehydratase small subunit		Down Regulated
yadD	944781	Uncharacterized protein yadD	['Replication recombination and repair', 'DNA recombination']	Temporarily Up Regulated
ydjM	945644	Inner membrane protein ydjM		Up Regulated
araC	944780	Arabinose operon regulatory protein		Up Regulated
ydiE	946205	Uncharacterized protein ydiE	['Amino acid transport and metabolism', 'Building block biosynthesis', 'metabolic process', 'biosynthetic process', 'aromatic amino acid metabolism']	Up Regulated
flgL	945646	Flagellar hook-associated protein 3		Down Regulated
ydiA	946207	Uncharacterized protein yuaU; Putative phosphotransferase	[]	Ambiguous/Unsorted
ppsR	946207	Uncharacterized protein yuaU; Putative phosphotransferase ydiA		Ambiguous/Unsorted
flgG	945647	Flagellar basal-body rod protein flgG		Down Regulated
baeR	946605	Transcriptional regulatory protein baeR		Up Regulated
ubiG	946607	3-demethylubiquinone-9 3-methyltransferase		Down Regulated
rffE	944789	UDP-N-acetylglucosamine 2-epimerase		Temporarily Down Regulated
ydiB	946200	Quinate/shikimate dehydrogenase		Temporarily Down Regulated
nrdA	946612	Ribonucleoside-diphosphate reductase; Ribonucleoside-diphosphate reductase 1 subunit alpha		Down Regulated
ybiS	945441	Uncharacterized protein ybiS	['phosphoenolpyruvate dependent sugar phosphotransferase system']	Ambiguous/Unsorted
gyrA	946614	DNA gyrase subunit A		Down Regulated
hicB	946001	Uncharacterized HTH-type transcriptional regulator ydcQ		Up Regulated
ydcQ	946001	Uncharacterized HTH-type transcriptional regulator ydcQ	['Coenzyme transport and metabolism']	Up Regulated
fabH	946003	3-oxoacyl-[acyl-carrier-protein] synthase 3		Down Regulated
gltJ	945443	Glutamate/aspartate transport system permease protein gltJ		Down Regulated
ydcR	946004	Uncharacterized HTH-type transcriptional regulator ydcR	[]	Up Regulated
flgF	945639	Flagellar basal-body rod protein flgF		Down Regulated
yceF	945631	Maf-like protein yceF 1; Maf-like protein yceF		Up Regulated
yniC	945632	Phosphatase yniC		Temporarily Down Regulated
tolB	945429	Protein tolB		Down Regulated
ydiU	946219	UPF0061 protein ydiU		Down Regulated
pspD	945635	Phage shock protein D		Up Regulated
folA	944790	Dihydrofolate reductase; Dihydrofolate reductase type 1		Temporarily Up Regulated
flgE	945636	Flagellar hook protein flgE		Down Regulated
yaaH	944792	Inner membrane protein yaaH		Ambiguous/Unsorted

flgN	945634	Flagella synthesis protein flgN			Down Regulated
murE	944791	UDP-N-acetylglucosamyl-L-alanyl-D-glutamate-2,6-diaminopimelate ligase			Down Regulated
aceF	944794	Dihydrolipoyllysine-residue acetyltransferase component of pyruvate dehydrogenase complex			Down Regulated
setA	944793	Sugar efflux transporter A			Temporarily Down Regulated
leuB	944798	3-isopropylmalate dehydrogenase			Down Regulated
otsB	946406	Trehalose-phosphate phosphatase			Up Regulated
ftsI	944799	Peptidoglycan synthetase ftsI			Down Regulated
yncB	946012	Putative NADP-dependent oxidoreductase yncB			Ambiguous/Unsorted
ycjG	946013	Z2450; ECUMN_1620; ECED1_1533; ECDH10B_1444; b1325; UTI89_C1596; E2348C_1518; ECIAI1_1350; c1797; APEC01_478; ECS88_1467; ECIAI39_1677; EC55989_1489			Temporarily Down Regulated
yccA	946016	Inner membrane protein yccA			Down Regulated
ybiJ	945433	Uncharacterized protein ybiJ	□		Up Regulated
araB	946017	Ribulokinase			Up Regulated
glnQ	945435	Glutamine transport ATP-binding protein glnQ			Down Regulated
yfcA	946808	UPF0721 transmembrane protein yfcA			Down Regulated
csgC	945623	Putative curl production protein csgC			Down Regulated
yfcL	946804	Uncharacterized protein yfcL	["Cell wall membrane envelope biogenesis", "amino acid biosynthetic process", "aromatic amino acid family biosynthetic process"]		Down Regulated
yfbG	946803	b0502; ECDH10B_0458			Down Regulated
ribD	945620	Riboflavin biosynthesis protein ribD			Down Regulated
glnP	945621	Glutamine transport system permease protein glnP			Temporarily Down Regulated
dapB	944762	Dihydrodipicolinate reductase			Down Regulated
ileS	944761	Isoleucyl-tRNA synthetase			Down Regulated
hcaD	945427	3-phenylpropionate/cinnamic acid dioxygenase ferredoxin-NAD(+) reductase component			Temporarily Up Regulated
mepA	946812	Penicillin-insensitive murein endopeptidase			Down Regulated
ybiH	945421	Uncharacterized HTH-type transcriptional regulator ybiH	["Defense mechanisms", "Primary Active Transporters"]		Ambiguous/Unsorted
exbB	945420	Biopolymer transport protein exbB			Down Regulated
cyoB	945615	Ubiquinol oxidase subunit 1			Down Regulated
ndk	945611	Nucleoside diphosphate kinase			Temporarily Down Regulated
msyB	945612	Acidic protein msyB			Temporarily Up Regulated
rbbA	947998	Uncharacterized ABC transporter ATP-binding protein yhiH			Temporarily Up Regulated
carB	944775	Carbamoyl-phosphate synthase large chain			Down Regulated
ftsA	944778	Cell division protein ftsA			Down Regulated
nikR	947995	Nickel-responsive regulator			Temporarily Up Regulated
sspB	944774	Stringent starvation protein B			Down Regulated
kefC	944773	Glutathione-regulated potassium-efflux system protein kefC			Ambiguous/Unsorted
rpmD	947797	50S ribosomal protein L30			Down Regulated
secY	947799	Preprotein translocase subunit secY; Preprotein translocase secY subunit			Down Regulated
rplO	947798	50S ribosomal protein L15			Down Regulated
rpsD	947793	30S ribosomal protein S4			Down Regulated
rpsK	947792	30S ribosomal protein S11			Down Regulated
rpsE	947795	30S ribosomal protein S5			Down Regulated
rpoA	947794	DNA-directed RNA polymerase subunit alpha			Down Regulated
rpsM	947791	30S ribosomal protein S13; 30S ribosomal protein			Down Regulated
metC	946240	Cystathionine beta-lyase metC			Down Regulated
ybdG	946243	Uncharacterized protein ybdG	□		Down Regulated
pspF	945683	Psp operon transcriptional activator			Down Regulated
potD	945682	Spermidine/putrescine-binding periplasmic protein			Down Regulated
fiu	946246	Catecholate siderophore receptor fiu			Temporarily Up Regulated
cobB	945687	NAD-dependent deacetylase			Up Regulated
panD	945686	Aspartate 1-decarboxylase			Down Regulated
nudJ	945689	Phosphatase nudJ			Down Regulated
ybhL	945401	Inner membrane protein ybhL			Temporarily Up Regulated
rplQ	947784	50S ribosomal protein L17			Down Regulated
trkA	947788	Trk system potassium uptake protein trkA			Up Regulated
yhdN	947785	Uncharacterized protein yhdN	□		Ambiguous/Unsorted
yeHQ	946654	ECIAI39_0891; E2348C_2268; APEC01_4427; c2652; ECS88_2265; b2122; Z3295; ECED1_2478; ECUMN_2456; UTI89_C2394; ECDH10B_2277; ECIAI1_2198			Up Regulated
spy	946253	Spheroplast protein Y			Up Regulated
ycfP	945676	UPF0227 protein ycfP			Temporarily Up Regulated
astB	946259	N-succinylarginine dihydrolase			Ambiguous/Unsorted
lptE	946257	LPS-assembly lipoprotein lptE			Down Regulated
lolC	945673	Lipoprotein-releasing system transmembrane protein lolC			Down Regulated
flgB	945678	Flagellar basal-body rod protein flgB			Down Regulated
parE	947501	DNA topoisomerase 4 subunit B			Down Regulated
ybiX	947502	PKHD-type hydroxylase ybiX			Ambiguous/Unsorted
yrdB	947774	Uncharacterized protein yrdB	["Building block biosynthesis", "purine nucleotide biosynthetic process", "aromatic amino acid family biosynthetic process"]		Temporarily Down Regulated
yrda	947775	Protein yrdA			Down Regulated

fmt	947779	Methionyl-tRNA formyltransferase		Ambiguous/Unsorted
nlpC	946220	Probable lipoprotein nlpC		Up Regulated
holB	945661	DNA polymerase III subunit delta'		Down Regulated
thrS	946222	Threonyl-tRNA synthetase		Down Regulated
mrp	946627	Protein mrp		Ambiguous/Unsorted
pntA	946628	NAD(P) transhydrogenase subunit alpha		Down Regulated
ycfS	945666	Uncharacterized protein ycfS	□	Down Regulated
aroH	946229	Phospho-2-dehydro-3-deoxyheptonate aldolase, Trp-sensitive		Down Regulated
infC	946225	Translation initiation factor IF-3		Down Regulated
accC	947761	Biotin carboxylase		Down Regulated
aaeR	947760	HTH-type transcriptional activator aaeR		Up Regulated
yhdV	947767	Uncharacterized protein yhdV	[" Electrochemical potential driven transporters", " Protection", "cell cycle", "cell division"]	Up Regulated
acrF	947768	Acriflavine resistance protein F		Up Regulated
yagV	946631	Uncharacterized protein yagV	□	Up Regulated
yegU	946630	Uncharacterized protein yegU	□	Down Regulated
yhdY	947764	Inner membrane amino-acid ABC transporter permease protein yhdY		Down Regulated
yceD	945650	Uncharacterized protein yceD	□	Down Regulated
ydiZ	946232	Uncharacterized protein ydiZ	[" Carbon compound utilization", " Energy metabolism carbon ", "translation"]	Temporarily Up Regul
yfaA	946618	Uncharacterized protein yfaA	["Replication recombination and repair", " RNA related", " Type of regulation"]	Ambiguous/Unsorted
rpmF	945657	50S ribosomal protein L32		Down Regulated
ycfH	945656	Uncharacterized deoxyribonuclease ycfH	□	Temporarily Up Regul
ydjN	946238	Uncharacterized symporter ydjN	□	Down Regulated
yhch	947750	Uncharacterized protein yhcH	["Carbohydrate transport and metabolism", "carbohydrate metabolic process"]	Up Regulated
flgK	945648	Flagellar hook-associated protein 1		Down Regulated
fhuE	945649	FhuE receptor		Ambiguous/Unsorted
yegS	946626	Probable lipid kinase yegS; Lipid kinase yegS		Up Regulated
mreD	947756	Rod shape-determining protein mreD		Temporarily Down Re
nanK	947757	N-acetylmannosamine kinase		Temporarily Up Regul
tolA	946625	Protein tolA		Down Regulated
accB	947758	Biotin carboxyl carrier protein of acetyl-CoA carboxylase		Down Regulated
hpt	946624	Hypoxanthine phosphoribosyltransferase		Down Regulated
ccmH	946623	Cytochrome c-type biogenesis protein ccmH		Down Regulated
cyaA	947755	Adenylate cyclase		Temporarily Down Re
nanE	947745	Putative N-acetylmannosamine-6-phosphate 2-epimerase		Up Regulated
aaeA	947748	p-hydroxybenzoic acid efflux pump subunit aaeA		Up Regulated
aaeB	947747	p-hydroxybenzoic acid efflux pump subunit aaeB		Up Regulated
glgS	947533	Glycogen synthesis protein glgS		Up Regulated
hybC	945182	Hydrogenase-2 large chain		Up Regulated
flgI	947534	Flagellar P-ring protein		Down Regulated
yejL	946694	UPF0352 protein yejL		Ambiguous/Unsorted
yqiK	947537	Inner membrane protein yqiK		Up Regulated
rtn	946695	Protein rtn		Temporarily Down Re
nanT	947740	Putative sialic acid transporter; Putative sialic acid transporter 1		Up Regulated
lpxT	946693	Inner membrane protein yeiU		Down Regulated
feB	947538	Ferrienterobactin-binding periplasmic protein		Ambiguous/Unsorted
yeeN	946493	UPF0082 protein yeeN		Temporarily Down Re
guaA	947334	GMP synthase [glutamine-hydrolyzing]		Down Regulated
rhtC	948317	Threonine efflux protein		Down Regulated
sulA	947335	Cell division inhibitor sulA		Up Regulated
tatB	948319	Sec-independent protein translocase protein tatB homolog; Sec-independent protein translocase protein tatB		Down Regulated
dapE	948313	Succinyl-diaminopimelate desuccinylase		Ambiguous/Unsorted
pldB	948314	Lysophospholipase L2		Temporarily Down Re
shiA	946495	Shikimate transporter		Down Regulated
RhtB	948316	Homoserine/homoserine lactone efflux protein		Down Regulated
yhcG	947739	Uncharacterized protein yhcG	[" Macromolecule degradation"]	Down Regulated
glgB	947940	1,4-alpha-glucan-branching enzyme		Down Regulated
metR	948310	HTH-type transcriptional regulator metR		Up Regulated
hemY	948311	Protein hemY		Down Regulated
glgX	947941	Glycogen debranching enzyme		Up Regulated
yeeJ	946498	Uncharacterized protein yeeJ		Up Regulated
ushA	947331	Protein ushA		Down Regulated
yejM	946685	Inner membrane protein yejM		Down Regulated
aroB	947927	3-dehydroquinate synthase		Down Regulated
flgC	946687	Flagellar basal-body rod protein flgC		Down Regulated
nuoM	947731	NADH-quinone oxidoreductase subunit M		Down Regulated

yrbG	947730	Inner membrane protein yrbG		Ambiguous/Unsorted
yejF	946689	Uncharacterized ABC transporter ATP-binding protein yejF		Down Regulated
pgpA	947542	Phosphatidylglycerophosphatase A		Up Regulated
ahpF	947540	Alkyl hydroperoxide reductase subunit F		Down Regulated
kdsD	947734	Arabinose 5-phosphate isomerase		Down Regulated
rtcB	947929	Protein rtcB		Temporarily Up Regul
yggG	945173	Uncharacterized metalloprotease yggG	I	Up Regulated
osmF	946681	Putative osmoprotectant uptake system substrate-binding protein osmF		Temporarily Up Regul
bgfIX	946682	Periplasmic beta-glucosidase		Temporarily Down Reg
rfaE	947548	Bifunctional protein rfaE		Down Regulated
flgM	946684	Negative regulator of flagellin synthesis		Down Regulated
yodA	946480	Metal-binding protein yodA		Up Regulated
zinT	946480	Metal-binding protein yodA		Up Regulated
ypeA	947348	Uncharacterized protein ypeA	I	Up Regulated
hchA	946481	Chaperone protein hchA		Ambiguous/Unsorted
pldA	948307	Phospholipase A1		Down Regulated
yedW	946486	Probable transcriptional regulatory protein yedW		Temporarily Down Reg
damX	947930	Protein damX		Down Regulated
rffG	948300	dTDP-glucose 4,6-dehydratase		Down Regulated
glgP	947931	Phosphorylase; Glycogen phosphorylase		Down Regulated
rffM	948301	Probable UDP-N-acetyl-D-mannosaminuronic acid transferase		Down Regulated
yhbJ	947727	UPF0042 protein yhbJ		Down Regulated
glpE	947935	Thiosulfate sulfurtransferase glpE		Temporarily Down Reg
glgA	947932	Glycogen synthase		Temporarily Up Regul
gltB	947724	Glutamate synthase [NADPH] large chain		Down Regulated
gltD	947723	Glutamate synthase [NADPH] small chain		Down Regulated
speE	947726	Spermidine synthase		Down Regulated
ampE	946678	Protein ampE		Ambiguous/Unsorted
lptB	947725	Lipopolysaccharide export system ATP-binding protein lptB		Down Regulated
fruK	946676	1-phosphofructokinase		Temporarily Up Regul
secG	947720	Protein-export membrane protein secG		Down Regulated
npr	947914	Phosphocarrier protein NPr		Ambiguous/Unsorted
yeiP	946674	Elongation factor P-like protein		Down Regulated
lptC	947722	Lipopolysaccharide export system protein lptC		Down Regulated
bioH	947916	Carboxylesterase bioH		Down Regulated
fruA	946672	PTS system fructose-specific EIIBC component		Temporarily Up Regul
aes	947514	Acetyl esterase		Up Regulated
araA	947511	L-arabinose isomerase		Up Regulated
lptT	947317	Lysophospholipid transporter lptT		Temporarily Up Regul
kdul	947319	4-deoxy-L-threo-5-hexulosulose-uronate ketol-isomerase		Down Regulated
yafC	947507	Uncharacterized HTH-type transcriptional regulator yafC	['Transcription', 'RNA related', 'Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
rsxE	947509	Electron transport complex protein rnfE		Down Regulated
galR	947314	HTH-type transcriptional regulator galR		Temporarily Down Reg
malP	947922	Phosphorylase; Maltodextrin phosphorylase		Down Regulated
malQ	947923	4-alpha-glucanotransferase		Down Regulated
gntT	947924	High-affinity gluconate transporter		Down Regulated
kdsC	947717	3-deoxy-D-manno-octulonate 8-phosphate phosphatase		Ambiguous/Unsorted
hpf	947718	Probable sigma(54) modulation protein		Down Regulated
pspB	945893	Phage shock protein B		Up Regulated
speD	947719	S-adenosylmethionine decarboxylase proenzyme		Down Regulated
lptA	947920	Lipopolysaccharide export system protein lptA		Down Regulated
speB	947715	Agmatinase		Down Regulated
yeiH	946668	UPF0324 inner membrane protein yeiH; Probable endonuclease 4		Up Regulated
ybjQ	945493	UPF0145 protein ybjQ		Up Regulated
rpoN	947714	RNA polymerase sigma-54 factor		Down Regulated
nfo	946669	Endonuclease 4; Probable endonuclease 4		Down Regulated
yrbD	947712	Uncharacterized protein yrbD	['Amino acid transport and metabolism']	Down Regulated
mlaD	947712	Uncharacterized protein yrbD		Down Regulated
ybjS	945495	Uncharacterized protein ybjS	I	Ambiguous/Unsorted
aat	945490	Leucyl/phenylalanyl-tRNA-protein transferase		Down Regulated
nudE	947906	ADP compounds hydrolase nudE		Down Regulated
mlaC	947710	Protein yrbC		Down Regulated
yrbC	947710	Protein yrbC		Down Regulated
yohD	946661	Inner membrane protein yohD		Ambiguous/Unsorted
thrC	945198	Threonine synthase		Down Regulated



ydgD	946436	Uncharacterized serine protease ydgD	['response to stress']	Up Regulated
livG	947967	High-affinity branched-chain amino acid transport ATP-binding protein livG		Temporarily Up Regul
livF	947961	High-affinity branched-chain amino acid transport ATP-binding protein livF		Down Regulated
yhhK	947963	Uncharacterized protein yhhK	[' Carbon compound utilization', ' Metabolism of other compounds']	Down Regulated
ybeY	946430	Putative metalloprotease ybeY		Temporarily Up Regul
ghra	946431	Glyoxylate/hydroxypyruvate reductase A		Down Regulated
ycH	948574	Inner membrane protein ycH		Ambiguous/Unsorted
gsiA	945457	Glutathione import ATP-binding protein gsiA		Down Regulated
gsiB	945459	Glutathione-binding protein gsiB		Down Regulated
rpoD	947567	RNA polymerase sigma factor rpoD; RNA polymerase sigma factor		Temporarily Down Re
moeA	945454	Molybdopterin biosynthesis protein moeA		Down Regulated
dacC	945455	D-alanyl-D-alanine carboxypeptidase dacC		Temporarily Up Regul
iaaA	945456	Isoaspartyl peptidase		Down Regulated
folC	945451	Bifunctional protein folC		Down Regulated
moeB	945452	Molybdopterin biosynthesis protein moeB		Ambiguous/Unsorted
mug	947560	G/U mismatch-specific DNA glycosylase		Ambiguous/Unsorted
ggt	947947	Gamma-glutamyltranspeptidase		Up Regulated
ycIW	945859	Uncharacterized protein yciW	['Lipid transport and metabolism']	Down Regulated
proB	946425	Glutamate 5-kinase		Ambiguous/Unsorted
ycjB	948569	Uncharacterized protein ycjB	□	Down Regulated
rmb	945864	Exoribonuclease 2		Down Regulated
soxR	948566	Redox-sensitive transcriptional activator soxR		Up Regulated
fecA	946427	Fe(3+) dicitrate transport protein fecA		Down Regulated
soxS	948567	Regulatory protein soxS		Temporarily Up Regul
yrbB	947954	Uncharacterized protein yrbB	['Cell wall membrane envelope biogenesis', ' Macromolecules cellular constituent biosynthesis', 'cell cycle', 'cell division']	Down Regulated
mlaB	947954	Uncharacterized protein yrbB		Down Regulated
ugpC	947953	sn-glycerol-3-phosphate import ATP-binding protein ugpC		Temporarily Up Regul
ydfI	945861	Uncharacterized oxidoreductase ydfI	[' Carbon compound utilization']	Temporarily Down Re
yciN	945860	Protein yciN		Temporarily Up Regul
ppgB	945863	Phosphatidylglycerophosphatase B		Down Regulated
topA	945862	DNA topoisomerase 1		Down Regulated
uvrY	946424	Response regulator uvrY		Ambiguous/Unsorted
yjbR	948560	Uncharacterized protein yjbR	['Amino acid transport and metabolism', ' Central intermediary metabolism', 'amino acid biosynthetic process', 'biosynthetic process']	Temporarily Down Re
alr	948564	Alanine racemase, biosynthetic; Alanine racemase		Down Regulated
ycjD	948565	Putative permease ycjD		Temporarily Up Regul
dapF	948364	Diaminopimelate epimerase		Down Regulated
ydgC	945156	Inner membrane protein ydgC		Temporarily Down Re
ydgJ	947164	Uncharacterized oxidoreductase ydgJ	□	Temporarily Down Re
glnL	948360	Nitrogen regulation protein NR(II); Sensor protein		Down Regulated
glnG	948361	Nitrogen regulation protein NR(I)		Down Regulated
hemN	948362	Oxygen-independent coproporphyrinogen-III oxidase		Down Regulated
feaR	945941	Transcriptional activator feaR		Ambiguous/Unsorted
emrB	947167	Multidrug resistance protein B		Ambiguous/Unsorted
yihL	948363	UPF0241 protein yihL		Up Regulated
luxS	947168	S-ribosylhomocysteine lyase		Down Regulated
iclR	948524	Acetate operon repressor		Down Regulated
yihL	948368	Uncharacterized HTH-type transcriptional regulator yihL	['Amino acid transport and metabolism', ' Carbon compound utilization', ' Central intermediary metabolism', ' Primary Active Transp	Down Regulated
rbfA	945154	Glucose-1-phosphate thymidylyltransferase; Glucose-1-phosphate thymidylyltransferase 1		Down Regulated
ubiE	948926	Ubiquinone/maequinone biosynthesis methyltransferase ubiE		Down Regulated
typA	948369	GTP-binding protein typA/BipA; GTP-binding protein typA/bipA		Down Regulated
prfB	947369	Peptide chain release factor 2		Down Regulated
yccJ	948930	Uncharacterized protein yccJ	[' Macromolecules cellular constituent biosynthesis']	Temporarily Up Regul
malY	945937	Protein malY		Temporarily Up Regul
ybgS	945356	Uncharacterized protein ybgS	['Inorganic ion transport and metabolism', ' Electrochemical potential driven transporters', 'ion transport']	Temporarily Up Regul
Cyca	948725	D-serine/D-alanine/glycine transporter		Down Regulated
fklB	948726	FKBP-type 22 kDa peptidyl-prolyl cis-trans isomerase		Down Regulated
ybiO	945935	Uncharacterized mscS family protein ybiO	□	Temporarily Up Regul
ytfB	948727	Uncharacterized protein ytfB	['Replication recombination and repair', 'DNA recombination', 'DNA integration']	Ambiguous/Unsorted
galE	945354	UDP-glucose 4-epimerase		Ambiguous/Unsorted
rpsR	948721	30S ribosomal protein S18		Down Regulated
priB	948722	Primosomal replication protein n		Down Regulated
fdx	947160	2Fe-2S ferredoxin		Temporarily Down Re
mngB	945359	Alpha-mannosidase mngB		Up Regulated
rpsF	948723	30S ribosomal protein S6		Down Regulated
ygfA	945167	Uncharacterized protein ygfA	['cell cycle', 'cell division']	Up Regulated

dtd	948378	D-tyrosyl-tRNA(Tyr) deacylase		Down Regulated
dbpA	947153	ATP-independent RNA helicase dbpA		Down Regulated
ycfL	948539	Uncharacterized protein ycfL	['Nucleotide transport and metabolism', 'Cell wall membrane envelope biogenesis', 'Building block biosynthesis']	Down Regulated
yfgI	945168	Uncharacterized protein yfgI	['Lipid transport and metabolism', 'Building block biosynthesis']	Temporarily Up Regul
malE	948538	Maltose-binding periplasmic protein		Temporarily Up Regul
malK	948537	Maltose/maltodextrin import ATP-binding protein malK		Down Regulated
ygaC	947156	Uncharacterized protein ygaC	[]	Up Regulated
cpdB	948729	ECs5191; ECP_4467; ECSE_4519; EcSMS35_4692; ECUMN_4750; Z5824; EcoIC_3793; ECS88_4807; E2348C_4544; EC55989_4773; ECDH10B_4408; ECED1_5072; ECH74115_5730; E	ETemporarily Down Re	
trkG	945932	Trk system potassium uptake protein trkG		Up Regulated
ascF	947154	PTS system arbutin-, cellobiose-, and salicin-specific EIIBC component		Up Regulated
feaB	945933	Phenylacetaldehyde dehydrogenase		Up Regulated
malF	948532	Maltose transport system permease protein malF		Down Regulated
lysC	948531	Aspartokinase; Lysine-sensitive aspartokinase 3		Down Regulated
pqiA	944999	Paraquat-inducible protein A		Ambiguous/Unsorted
malG	948530	Maltose transport system permease protein malG		Temporarily Up Regul
ytjC	948918	Probable phosphoglycerate mutase gpmB		Temporarily Down Re
macB	945164	Macrolide export ATP-binding/permease protein macB		Temporarily Down Re
ybcL	945165	UPF0098 protein ybcL		Up Regulated
yigP	948915	Uncharacterized protein yigP	['protein secretion']	Down Regulated
ytjD	948924	Uncharacterized tRNA/rRNA methyltransferase lasT		Ambiguous/Unsorted
ytfH	948730	Uncharacterized HTH-type transcriptional regulator ytfH	[]	Up Regulated
yqeA	947358	Carbamate kinase-like protein yqeA		Temporarily Up Regul
mocA	947356	Uncharacterized protein ygfJ		Temporarily Up Regul
ygfJ	947356	Uncharacterized protein ygfJ	['electron transport']	Temporarily Up Regul
glnA	948370	Glutamine synthetase		Down Regulated
ytfJ	948737	Uncharacterized protein ytfJ	['Energy production and conversion', 'Secondary metabolites biosynthesis transport and catabolism']	Up Regulated
ytfL	948735	UPF0053 inner membrane protein ytfL		Temporarily Down Re
modF	945368	Putative molybdenum transport ATP-binding protein modF		Down Regulated
yaiZ	947355	Uncharacterized protein yaiZ	[]	Ambiguous/Unsorted
gltK	947354	Glutamate/aspartate transport system permease protein gltK		Down Regulated
gorB	948731	Uncharacterized oxidoreductase ytfG		Up Regulated
ygeR	947352	Uncharacterized lipoprotein ygeR		Ambiguous/Unsorted
ygbA	947187	Uncharacterized protein ygbA	['Energy production and conversion', 'Primary Active Transporters']	Up Regulated
msrB	947188	Peptide methionine sulfoxide reductase msrB		Ambiguous/Unsorted
fdol	948383	Formate dehydrogenase, cytochrome b556(fdo) subunit		Down Regulated
malM	948547	Maltose operon periplasmic protein		Temporarily Up Regul
allS	945139	HTH-type transcriptional activator allS		Up Regulated
ydjA	945964	Putative NAD(P)H nitroreductase ydjA		Down Regulated
yddB	945961	Uncharacterized protein yddB	['Cell wall membrane envelope biogenesis', 'translation', 'ion transport']	Temporarily Up Regul
hinT	948549	HIN-like protein hinT		Down Regulated
ybdJ	947183	Uncharacterized protein ybdJ	['Protection', 'ion transport', 'iron ion transport']	Up Regulated
nuoN	945136	NADH-quinone oxidoreductase subunit N		Down Regulated
MltB	947184	Membrane-bound lytic murein transglycosylase B		Temporarily Down Re
lamB	948548	Maltoporin		Down Regulated
frvX	948388	Putative frv operon protein frvX		Ambiguous/Unsorted
yfiL	947106	Uncharacterized protein yfiL	['Replication recombination and repair', 'DNA recombination']	Temporarily Up Regul
norR	947186	Anaerobic nitric oxide reductase transcription regulator norR		Up Regulated
tus	945135	DNA replication terminus site-binding protein		Up Regulated
recN	947105	DNA repair protein recN		Ambiguous/Unsorted
pmrD	945130	Signal transduction protein pmrD		Ambiguous/Unsorted
ffh	947102	Signal recognition particle protein		Temporarily Down Re
rimM	947101	Ribosome maturation factor rimM		Down Regulated
dgkA	948543	Diacylglycerol kinase		Ambiguous/Unsorted
mtn	948542	5'-methylthioadenosine/S-adenosylhomocysteine nucleosidase		Down Regulated
ylaB	948951	Uncharacterized protein ylaB	['Signal transduction mechanisms', 'Type of regulation', 'two component signal transduction system phosphorelay', 'transcription']	Up Regulated
yibA	948108	Protein yibA		Up Regulated
visC	947389	Protein visC		Down Regulated
efeU	948956	ECUMN_1201; ECIAI39_2139; ECS88_1033; ECDH10B_1089; EC55989_1127; b4490; ECED1_1172; ECIAI1_1062; E2348C_1067		Up Regulated
hypE	947182	Hydrogenase isoenzymes formation protein hypE		Temporarily Up Regul
ubiH	947388	2-octaprenyl-6-methoxyphenol hydroxylase		Down Regulated
ybbO	945337	Uncharacterized oxidoreductase ybbO	[]	Down Regulated
fhlA	947181	Formate hydrogenlyase transcriptional activator		Up Regulated
thiL	947387	Thiamine-monophosphate kinase		Down Regulated
lyxK	948101	L-xylulose/3-keto-L-gulonate kinase		Ambiguous/Unsorted
sapF	945335	Peptide transport system ATP-binding protein sapF		Down Regulated

ppa	948748	Inorganic pyrophosphatase		Down Regulated
allR	945333	HTH-type transcriptional repressor allR		Up Regulated
ygfZ	947384	tRNA-modifying protein ygfZ		Temporarily Down Reg
selB	948103	Selenocysteine-specific elongation factor		Down Regulated
yihW	948381	Uncharacterized HTH-type transcriptional regulator yihW	['Transcription', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcription DNA dependent']	Temporarily Up Regul
ydeN	945957	Uncharacterized sulfatase ydeN	['Signal transduction mechanisms', ' Metabolism of other compounds']	Temporarily Up Regul
cueR	945332	HTH-type transcriptional regulator cueR		Up Regulated
aegA	947383	Protein aegA		Temporarily Up Regul
fdoH	948395	Formate dehydrogenase-O iron-sulfur subunit		Down Regulated
dusA	948558	tRNA-dihydrouridine synthase A		Down Regulated
csrA	947176	Carbon storage regulator		Up Regulated
gorA	948556	Quinone oxidoreductase		Temporarily Up Regul
dnaB	948555	Replicative DNA helicase		Down Regulated
rhaT	948398	L-rhamnose-proton symporter		Up Regulated
mppA	945951	Periplasmic murein peptide-binding protein		Up Regulated
allA	945141	Ureidoglycolate hydrolase		Up Regulated
ThiM	945142	Hydroxyethylthiazole kinase		Temporarily Down Reg
dinF	948554	DNA-damage-inducible protein F		Ambiguous/Unsorted
yjbJ	948553	UPF0337 protein yjbJ		Temporarily Up Regul
mtlA	948118	PTS system mannitol-specific EIICBA component		Temporarily Up Regul
mtlR	948116	Mannitol operon repressor		Ambiguous/Unsorted
cydA	945341	Cytochrome d ubiquinol oxidase subunit 1		Up Regulated
mpl	948752	UDP-N-acetylmuramate:L-alanyl-gamma-D-glutamyl-meso-diaminopimelate ligase		Down Regulated
yibK	948119	Uncharacterized tRNA/rRNA methyltransferase yibK		Temporarily Down Reg
yibH	948110	Inner membrane protein yibH		Up Regulated
zitB	945348	Zinc transporter zitB		Ambiguous/Unsorted
yceB	947377	Uncharacterized lipoprotein yceB	['electron transport']	Down Regulated
betB	947376	Betaine aldehyde dehydrogenase		Down Regulated
ydhV	948756	Uncharacterized protein ydhV	[' Central intermediary metabolism']	Up Regulated
cydB	945347	Cytochrome d ubiquinol oxidase subunit 2		Ambiguous/Unsorted
fbp	948753	Fructose-1,6-bisphosphatase class 1		Ambiguous/Unsorted
ygtF	947373	Uncharacterized oxidoreductase ygtF	['tricarboxylic acid cycle']	Ambiguous/Unsorted
lysS	947372	Lysyl-tRNA synthetase; Lysyl-tRNA synthetase, heat inducible		Down Regulated
yibF	948113	Uncharacterized GST-like protein yibF	[]	Temporarily Down Reg
yddA	945945	Inner membrane ABC transporter ATP-binding protein yddA		Up Regulated
yibJ	948112	b3595; ECDH10B_3776; Z5017		Up Regulated
alkA	947371	DNA-3-methyladenine glycosylase 2		Temporarily Down Reg
yobB	948329	Uncharacterized protein yobB	['Replication recombination and repair']	Up Regulated
rflA	946262	Ribosomal large subunit pseudouridine synthase A; Pseudouridine synthase		Ambiguous/Unsorted
ygaH	945111	Uncharacterized protein ygaH	['Transcription', ' RNA related', ' Type of regulation', ' Protection', 'transcription', 'regulation of transcription DNA dependent']	Down Regulated
fre	948325	NAD(P)H-flavin reductase		Down Regulated
fadA	948324	3-ketoacyl-CoA thiolase		Up Regulated
ubiD	948326	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Ambiguous/Unsorted
tatA	948321	Sec-independent protein translocase protein tatA		Down Regulated
ysgA	948320	Putative carboxymethylenebutenolidase		Down Regulated
patA	947120	Putrescine aminotransferase		Up Regulated
torA	946267	Trimethylamine-N-oxide reductase 1		Up Regulated
apt	945113	Adenine phosphoribosyltransferase		Down Regulated
metE	948323	5-methyltetrahydropteroylglutamate--homocysteine methyltransferase		Ambiguous/Unsorted
acrA	945112	Acriflavine resistance protein A		Down Regulated
ybbP	945118	Uncharacterized ABC transporter permease ybbP		Temporarily Down Reg
pyrF	947121	Orotidine 5'-phosphate decarboxylase		Down Regulated
rhsD	945116	Protein rhsD		Up Regulated
yjhG	948769	UPF0076 protein yjhG		Up Regulated
secB	948123	Protein-export protein secB		Down Regulated
trpD	945109	Anthraniilate synthase component II		Down Regulated
gpsA	948125	Glycerol-3-phosphate dehydrogenase [NAD(P)+]		Down Regulated
moaE	945399	Molybdopterin-converting factor subunit 2		Temporarily Up Regul
pyrB	948767	Aspartate carbamoyltransferase catalytic chain; Aspartate carbamoyltransferase		Down Regulated
rhsA	948120	Protein rhsA		Up Regulated
pepB	948766	Peptidase B		Down Regulated
treR	948760	HTH-type transcriptional regulator treR		Ambiguous/Unsorted
ybhK	945390	UPF0052 protein ybhK		Temporarily Down Reg
ycfD	945391	Uncharacterized protein ycfD	[]	Up Regulated
cysE	948126	Serine acetyltransferase		Down Regulated

yibQ	948128	Uncharacterized protein yibQ	['proteolysis']	Temporarily Down Regulated
ybbN	947119	Uncharacterized protein ybbN	['Nucleotide transport and metabolism']	Down Regulated
pepQ	948335	Xaa-Pro dipeptidase		Down Regulated
ynjH	946279	Uncharacterized protein ynjH	['Amino acid transport and metabolism']	Up Regulated
ybbJ	945126	Inner membrane protein ybbJ		Temporarily Up Regulated
ompW	945128	Outer membrane protein W		Temporarily Up Regulated
gcvT	947390	Aminomethyltransferase		Down Regulated
rfaF	948135	ADP-heptose-LPS heptosyltransferase 2		Down Regulated
gcvP	947394	Glycine dehydrogenase [decarboxylating]		Down Regulated
rfaC	948136	Lipopolysaccharide heptosyltransferase 1		Down Regulated
YPD8	947395	Uncharacterized response regulatory protein ypdB	□	Temporarily Up Regulated
rfaD	948134	ADP-L-glycero-D-manno-heptose-6-epimerase		Down Regulated
gcvH	947393	Glycine cleavage system H protein		Down Regulated
yibN	948131	Uncharacterized protein yibN	□	Down Regulated
grxC	948132	Glutaredoxin-3		Down Regulated
argI	948774	Ornithine carbamoyltransferase chain I; Ornithine carbamoyltransferase		Temporarily Down Regulated
rraB	948773	Uncharacterized protein ydgD		Up Regulated
yigM	948772	Uncharacterized N-acetyltransferase yigM	□	Temporarily Up Regulated
tdh	948139	L-threonine 3-dehydrogenase		Ambiguous/Unsorted
tbl	948138	2-amino-3-ketobutyrate coenzyme A ligase		Temporarily Up Regulated
uvrD	948347	DNA helicase II		Down Regulated
rdoA	948346	Protein rdoA		Down Regulated
mobA	948349	Molybdopterin-guanine dinucleotide biosynthesis protein A		Temporarily Up Regulated
ybgC	948907	Acyl-CoA thioester hydrolase ybgC		Temporarily Down Regulated
yiHD	948348	Protein yiHD		Down Regulated
yafD	946286	UPF0294 protein yafD		Up Regulated
ygaW	947147	Uncharacterized protein ygaW	□	Down Regulated
sppA	946281	Protease 4		Down Regulated
nupG	946282	Nucleoside permease nupG		Down Regulated
ygaU	947144	Uncharacterized protein ygaU	□	Ambiguous/Unsorted
trmA	947143	tRNA (uracil-5-) methyltransferase		Temporarily Down Regulated
yjaG	948501	Uncharacterized protein yjaG	□	Down Regulated
rni	948502	Endonuclease V		Down Regulated
proW	947145	Glycine betaine/L-proline transport system permease protein proW		Ambiguous/Unsorted
purH	948503	Bifunctional purine biosynthesis protein purH		Down Regulated
ygiS	947140	Putative binding protein ygiS		Temporarily Down Regulated
purD	948504	Phosphoribosylamine-glycine ligase		Down Regulated
zraS	948506	Sensor protein; Sensor protein zraS		Ambiguous/Unsorted
ybjE	947142	Uncharacterized protein ybjE	['Building block biosynthesis', 'metabolic process']	Temporarily Down Regulated
zraP	948507	Zinc resistance-associated protein		Temporarily Up Regulated
holC	948787	DNA polymerase III subunit chi		Down Regulated
yfcD	946783	Uncharacterized Nudix hydrolase yfcD	['tricarboxylic acid cycle', 'response to antibiotic']	Down Regulated
yghG	945919	Uncharacterized protein yghG	['Replication recombination and repair', 'Carbon compound utilization', 'DNA recombination']	Up Regulated
yccU	949008	Uncharacterized protein yccU	□	Temporarily Up Regulated
folX	946781	D-erythro-7,8-dihydronoopterin triphosphate epimerase		Ambiguous/Unsorted
rfe	948789	Undecaprenyl-phosphate alpha-N-acetylglucosaminyl 1-phosphate transferase		Temporarily Down Regulated
rfaY	948145	Lipopolysaccharide core biosynthesis protein rfaY		Down Regulated
yajC	945374	UPF0092 membrane protein yajC		Down Regulated
rfaL	948148	O-antigen ligase		Down Regulated
rpsL	949000	30S ribosomal protein S9		Down Regulated
DeoB	948910	Phosphopentomutase		Temporarily Up Regulated
ybhA	945372	Phosphatase ybhA		Down Regulated
yfcI	946787	Uncharacterized protein yfcI	['Amino acid transport and metabolism', 'Building block biosynthesis', 'amino acid metabolic process', 'aromatic amino acid family b']	Up Regulated
radA	948912	DNA repair protein radA		Temporarily Up Regulated
mngR	945371	Mannosyl-D-glycerate transport/metabolism system repressor mngR		Ambiguous/Unsorted
intB	948782	ECDH10B_4464; ECIAI39_4743; UTI89_C4878; b4271; ECED1_5125; EC55989_4829; ECUMN_4803		Temporarily Up Regulated
nadR	948911	Transcriptional regulator nadR		Down Regulated
valS	948785	Valyl-tRNA synthetase		Down Regulated
serB	948913	Phosphoserine phosphatase		Temporarily Down Regulated
yfcH	946784	Epimerase family protein yfcH		Up Regulated
yeaG	946297	Uncharacterized protein yeaG	□	Up Regulated
YigA	948359	Uncharacterized protein yigA		Down Regulated
recR	945100	Recombination protein recR		Down Regulated
yihA	948358	Probable GTP-binding protein engB		Down Regulated
yigB	948357	Uncharacterized protein yigB	□	Down Regulated

ygaV	947136	Probable HTH-type transcriptional regulator ygaV		Up Regulated
tomB	945106	Uncharacterized protein ybaJ		Up Regulated
metA	948513	Homoserine O-succinyltransferase		Temporarily Up Regul
yjaB	948514	Uncharacterized N-acetyltransferase yjaB	I	Up Regulated
dnaX	945105	DNA polymerase III subunit tau		Down Regulated
polA	948356	DNA polymerase I		Down Regulated
ftsK	945102	DNA translocase ftsK		Temporarily Down Re
aceA	948517	Isocitrate lyase		Temporarily Up Regul
pagB	948518	Uncharacterized protein yjbD		Ambiguous/Unsorted
yjbD	948518	Uncharacterized protein yjbD		Ambiguous/Unsorted
xerC	948355	Tyrosine recombinase xerC		Down Regulated
ybaB	945104	UPF0133 protein ybaB		Down Regulated
asr	945103	Acid shock protein		Temporarily Up Regul
dsbA	948353	Thiol/disulfide interchange protein dsbA		Down Regulated
yicC	948154	UPF0701 protein yicC		Down Regulated
idnT	948798	Gnt-II system L-idonate transporter		Ambiguous/Unsorted
purF	946794	Amidophosphoribosyltransferase		Down Regulated
truA	946793	tRNA pseudouridine synthase A		Down Regulated
yjaH	948508	Uncharacterized protein yjaH	["Cell wall membrane envelope biogenesis", "lipopolysaccharide biosynthetic process"]	Down Regulated
pyrE	948157	Orotate phosphoribosyltransferase		Down Regulated
ynaJ	945901	Uncharacterized protein ynaJ	["Replication recombination and repair", "DNA recombination"]	Temporarily Down Re
bioC	945388	Biotin synthesis protein bioC		Down Regulated
slmA	948158	HTH-type protein slmA		Temporarily Down Re
uspE	945904	Universal stress protein E		Temporarily Up Regul
rph	948156	Ribonuclease PH		Temporarily Down Re
folK	948792	2-amino-4-hydroxy-6-hydroxymethyltetrahydropteridine pyrophosphokinase		Down Regulated
accD	946796	Acetyl-coenzyme A carboxyl transferase carboxyl transferase subunit beta		Down Regulated
ydaM	945909	Uncharacterized protein ydaM		Up Regulated
uxuB	946795	D-mannonate oxidoreductase		Up Regulated
ybhJ	945380	Uncharacterized protein ybhJ	["Energy production and conversion", "Energy metabolism carbon", "glycolysis", "tricarboxylic acid cycle"]	Up Regulated
deoC	948902	Deoxyribose-phosphate aldolase		Down Regulated
dedA	946798	Protein dedA		Down Regulated
deoA	948901	Thymidine phosphorylase		Down Regulated
tolQ	948900	Protein tolQ		Down Regulated
pheT	945382	Phenylalanyl-tRNA synthetase beta chain		Down Regulated
nuoG	946762	NADH-quinone oxidoreductase; NADH-quinone oxidoreductase subunit G		Down Regulated
ydcD	946958	Uncharacterized protein ydcD	["Cell wall membrane envelope biogenesis"]	Up Regulated
CARA	949025	Carbamoyl-phosphate synthase small chain		Temporarily Up Regul
yacL	944809	UPF0231 protein yacL		Temporarily Up Regul
nuoA	946764	NADH-quinone oxidoreductase subunit; NADH-quinone oxidoreductase subunit A		Down Regulated
yehU	949027	Inner membrane protein yehU		Ambiguous/Unsorted
mutM	946765	Formamidopyrimidine-DNA glycosylase		Temporarily Up Regul
idi	949020	Isopentenyl-diphosphate Delta-isomerase		Up Regulated
yfbS	946766	Uncharacterized transporter yfbS	I	Temporarily Down Re
yfbU	946767	UPF0304 protein yfbU		Down Regulated
selD	946768	Selenide, water dikinase		Down Regulated
lrhA	946769	Probable HTH-type transcriptional regulator lrhA		Up Regulated
ftsL	944803	Cell division protein ftsL		Ambiguous/Unsorted
ycl	948169	Alpha-xyllosidase		Temporarily Up Regul
fruR	944804	Fructose repressor		Ambiguous/Unsorted
yfdC	944801	Inner membrane protein yfdC		Up Regulated
gltS	948166	Sodium/glutamate symport carrier protein		Ambiguous/Unsorted
ydfJ	944802	b4600; c1969; EcHS_A1633; Z2153; E2348C_1663; ECED1_1671; ECDH10B_1674; ECH74115_2159; EC55989_1684; ECS88_1623; EcE24377A_1752; EcSMS35_1621; ECED1_1674; EC	Up Regulated	
fkpB	944807	FKBP-type 16 kDa peptidyl-prolyl cis-trans isomerase		Down Regulated
nuoH	946761	NADH-quinone oxidoreductase subunit H		Down Regulated
recG	948162	ATP-dependent DNA helicase recG		Down Regulated
rpoZ	948160	DNA-directed RNA polymerase subunit omega		Temporarily Down Re
trmH	948161	tRNA guanosine-2'-O-methyltransferase		Temporarily Down Re
maeA	946031	NAD-dependent malic enzyme		Down Regulated
ydhF	946960	Oxidoreductase ydhF		Up Regulated
adhP	946036	Alcohol dehydrogenase, propanol-preferring		Temporarily Up Regul
nuoC	946759	NADH-quinone oxidoreductase subunit C/D		Down Regulated
ackA	946775	Acetate kinase		Down Regulated
yfbV	946774	UPF0208 membrane protein yfbV		Up Regulated
ymdA	949012	Uncharacterized protein ymdA	I	Down Regulated

yfbT	946777	Phosphatase yfbT		Down Regulated
pta	946778	Phosphate acetyltransferase		Down Regulated
yicN	948173	Uncharacterized protein yicN	['Carbon compound utilization', 'regulation of transcription']	Temporarily Down Regulated
yicL	948176	Uncharacterized inner membrane transporter yicL	['regulation of cell shape']	Ambiguous/Unsorted
nlpA	948175	Lipoprotein 28		Down Regulated
ygtT	949018	Uncharacterized protein ygtT	['electron transport']	Temporarily Up Regulated
yicH	948171	Uncharacterized protein yicH	['Energy production and conversion']	Up Regulated
IspA	944800	Lipoprotein signal peptidase		Down Regulated
yfgD	946974	Uncharacterized protein yfgD	□	Temporarily Down Regulated
rhsE	946026	ECDH10B_1586; EC55989_0238; b1456		Ambiguous/Unsorted
ymbA	946972	Uncharacterized lipoprotein ymbA	['Amino acid transport and metabolism']	Temporarily Up Regulated
uraA	946978	Uracil permease		Down Regulated
galS	949043	HTH-type transcriptional regulator galS		Temporarily Up Regulated
nuoE	946746	NADH-quinone oxidoreductase subunit E		Down Regulated
yeiB	949044	Uncharacterized protein yeiB	['two component signal transduction system phosphorelay']	Down Regulated
yeiG	949045	S-formylglutathione hydrolase yeiG		Down Regulated
artQ	949046	Arginine transport system permease protein artQ		Down Regulated
dfp	949047	Coenzyme A biosynthesis bifunctional protein coaBC		Down Regulated
menE	946741	2-succinylbenzoate-CoA ligase		Temporarily Up Regulated
gltI	946938	Glutamate/aspartate periplasmic-binding protein		Temporarily Up Regulated
ftsQ	944823	Cell division protein ftsQ		Down Regulated
yadG	944833	Uncharacterized ABC transporter ATP-binding protein yadG		Down Regulated
can	944832	Carbonic anhydrase 2		Down Regulated
gnsB	946054	Protein gnsB		Down Regulated
secM	944831	Secretion monitor		Down Regulated
gcd	944830	Quinoprotein glucose dehydrogenase		Down Regulated
tmcA	946053	Uncharacterized protein ypfI		Ambiguous/Unsorted
ivbL	948181	IVBN operon leader peptide		Temporarily Up Regulated
nuoB	946738	NADH-quinone oxidoreductase subunit B		Down Regulated
rpmB	946941	50S ribosomal protein L28		Down Regulated
yfaZ	946739	Uncharacterized protein yfaZ	□	Temporarily Up Regulated
nuoI	946757	NADH-quinone oxidoreductase subunit I		Down Regulated
ubiX	949033	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Down Regulated
purE	949031	Phosphoribosylaminoimidazole carboxylase catalytic subunit		Down Regulated
yfcE	946755	Phosphodiesterase yfcE		Down Regulated
nuoJ	946756	NADH-quinone oxidoreductase subunit J		Down Regulated
nuoF	946753	NADH-quinone oxidoreductase subunit F		Down Regulated
yeiA	949037	Uncharacterized protein yeiA	['Nucleotide transport and metabolism']	Up Regulated
ppiB	949038	Peptidyl-prolyl cis-trans isomerase B; Peptidyl-prolyl cis-trans isomerase		Down Regulated
nadE	946946	NH(3)-dependent NAD(+) synthetase		Down Regulated
thyA	949035	Thymidylate synthase		Down Regulated
murD	944818	UDP-N-acetyl muramoylalanine-D-glutamate ligase		Down Regulated
surA	944812	Chaperone surA		Down Regulated
murF	944813	UDP-N-acetyl muramoyl-tripeptide-D-alanyl-D-alanine ligase		Down Regulated
mraY	944814	Phospho-N-acetyl muramoyl-pentapeptide-transferase		Down Regulated
wzzE	944815	Lipopolysaccharide biosynthesis protein wzzE		Down Regulated
uidC	944820	Membrane-associated protein uidC		Up Regulated
ddpB	946044	Probable D,D-dipeptide transport system permease protein ddpB		Down Regulated
secA	944821	Protein translocase subunit secA		Down Regulated
ibpB	948192	Small heat shock protein ibpB		Up Regulated
yidE	948193	Putative transport protein yidE		Up Regulated
ypfJ	946956	Uncharacterized protein ypfJ	□	Temporarily Up Regulated
bamC	946954	Lipoprotein 34		Down Regulated
gcvR	946950	Glycine cleavage system transcriptional repressor		Temporarily Up Regulated
yebQ	946048	Uncharacterized transporter yebQ	□	Temporarily Down Regulated
yfcN	944847	UPF0115 protein yfcN		Temporarily Down Regulated
ybgJ	945311	Uncharacterized protein ybgJ	□	Down Regulated
sucC	945312	Succinyl-CoA ligase [ADP-forming] subunit beta		Down Regulated
yadB	944846	Glutamyl-Q-tRNA(Asp) synthetase; Insertion element IS150 uncharacterized 14 kDa protein		Ambiguous/Unsorted
hrpB	944845	ATP-dependent RNA helicase hrpB		Temporarily Down Regulated
ybgK	945317	Uncharacterized protein ybgK	□	Down Regulated
lpxA	944849	Acyl-[acyl-carrier-protein]-UDP-N-acetylglucosamine O-acyltransferase		Down Regulated
yigR	948978	Uncharacterized protein yigR	□	Temporarily Up Regulated
rffD	948977	UDP-N-acetyl-D-mannosamine dehydrogenase		Down Regulated
glpQ	946725	Glycerophosphoryl diester phosphodiesterase		Temporarily Up Regulated

pinR	948973	Putative DNA-invertase from lambdoid prophage Rac		Up Regulated
coaE	949060	Dephospho-CoA kinase		Up Regulated
clcA	946715	H(+)Cl(-) exchange transporter clcA		Down Regulated
dksA	944850	DnaK suppressor protein		Temporarily Up Regul
sucB	945307	Dihydrolipoyllysine-residue succinyltransferase component of 2-oxoglutarate dehydrogenase complex		Down Regulated
hisJ	945309	Histidine-binding periplasmic protein		Temporarily Down Re
lpd	944854	Dihydrolipoyl dehydrogenase		Down Regulated
HtpX	946076	Probable protease htpX		Ambiguous/Unsorted
ydhC	946077	Inner membrane transport protein ydhC		Down Regulated
rnhB	944852	Ribonuclease HII		Down Regulated
aceE	944834	Pyruvate dehydrogenase E1 component		Down Regulated
IptG	945324	Lipopolysaccharide export system permease protein IptG		Ambiguous/Unsorted
sdhD	945322	Succinate dehydrogenase hydrophobic membrane anchor subunit		Down Regulated
panB	944839	3-methyl-2-oxobutanoate hydroxymethyltransferase		Down Regulated
tolR	945328	Protein tolR		Down Regulated
yjhQ	949059	Uncharacterized N-acetyltransferase yjhQ	["Translation ribosomal structure and biogenesis", "translation"]	Up Regulated
csgA	949055	Major curlin subunit		Up Regulated
glpC	946735	Anaerobic glycerol-3-phosphate dehydrogenase subunit C		Up Regulated
trxB	949054	Thioredoxin reductase		Down Regulated
menC	946734	o-succinylbenzoate synthase		Down Regulated
lpxH	949053	UDP-2,3-diacylglicosamine hydrolase		Down Regulated
lrp	949051	Leucine-responsive regulatory protein		Down Regulated
cydD	949052	ATP-binding/permease protein cydD		Down Regulated
rluE	945701	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase E		Down Regulated
hipA	946064	Protein hipA		Temporarily Up Regul
ygbL	947197	Putative aldolase class 2 protein ygbL		Temporarily Up Regul
manA	944840	Mannose-6-phosphate isomerase		Temporarily Down Re
ybgL	945318	UPF0271 protein ybgL		Down Regulated
pphB	947196	Serine/threonine-protein phosphatase 2		Temporarily Up Regul
ygbK	947199	Uncharacterized protein ygbK	["Carbohydrate transport and metabolism"]	Up Regulated
ydeJ	946067	Protein ydeJ		Up Regulated
yacH	944868	Uncharacterized protein yacH	["Signal transduction mechanisms", "Type of regulation", "signal transduction"]	Up Regulated
argP	944867	Chromosome initiation inhibitor		Ambiguous/Unsorted
caIB	948997	Crotonobetainyl-CoA:carnitine CoA-transferase		Up Regulated
eco	946700	Ecotin		Down Regulated
symE	949088	Endoribonuclease symE		Up Regulated
ymdB	946987	UPF0189 protein ymdB		Ambiguous/Unsorted
bamB	946982	Lipoprotein yfgL		Down Regulated
der	946983	GTP-binding protein engA		Down Regulated
yfgJ	946984	Uncharacterized protein yfgJ	["Type of regulation"]	Ambiguous/Unsorted
cdsA	944876	Phosphatidate cytidylyltransferase		Temporarily Down Re
dnaE	944877	DNA polymerase III subunit alpha		Down Regulated
yfgG	946980	Uncharacterized protein yfgG	["Nucleotide transport and metabolism"]	Up Regulated
yfgM	946981	UPF0070 protein yfgM		Down Regulated
yaeR	944875	Uncharacterized protein yaeR	□	Ambiguous/Unsorted
glnH	944872	Glutamine-binding periplasmic protein		Down Regulated
flhE	946094	Flagellar protein flhE		Down Regulated
prc	946096	Tail-specific protease		Down Regulated
bamA	944870	Outer membrane protein assembly factor yaeT		Down Regulated
rseP	944871	Regulator of sigma E protease		Down Regulated
ynfN	946097	Uncharacterized protein ynfN	□	Up Regulated
osmE	945305	Osmotically-inducible lipoprotein E		Temporarily Up Regul
sucA	945303	2-oxoglutarate dehydrogenase E1 component		Down Regulated
ulaF	948711	L-ribulose-5-phosphate 4-epimerase ulaF		Up Regulated
aer	945301	Aerotaxis receptor		Up Regulated
erpA	944857	Iron-sulfur cluster insertion protein erpA		Up Regulated
yjfY	948713	Uncharacterized protein yjfY	□	Temporarily Up Regul
kdpE	945302	KDP operon transcriptional regulatory protein kdpE		Temporarily Up Regul
yciM	944858	Uncharacterized protein yciM	□	Ambiguous/Unsorted
glpA	946713	Anaerobic glycerol-3-phosphate dehydrogenase subunit A		Up Regulated
menF	946712	Menaquinone-specific isochorismate synthase		Ambiguous/Unsorted
sbcC	949076	Nuclease sbcCD subunit C		Down Regulated
apbE	946711	Thiamine biosynthesis lipoprotein apbE		Temporarily Down Re
lolA	948989	Outer-membrane lipoprotein carrier protein		Down Regulated
betA	945716	Choline dehydrogenase		Down Regulated

xdhD	949079	Probable hypoxanthine oxidase xdhD		Up Regulated
flgH	946996	Flagellar L-ring protein		Down Regulated
sseA	946993	3-mercaptopyruvate sulfurtransferase		Temporarily Up Regul
glpT	946704	Glycerol-3-phosphate transporter		Up Regulated
sseB	946994	Protein sseB		Down Regulated
ulaR	948706	HTH-type transcriptional regulator ulaR		Up Regulated
rodZ	946992	Cytoskeleton protein rodZ		Temporarily Down Re
acnB	944864	Aconitate hydratase 2		Down Regulated
yifP	948707	Esterase yifP		Ambiguous/Unsorted
yifN	948709	Uncharacterized protein yifN	[" Building block biosynthesis", "ion transport"]	Up Regulated
tsf	944866	Elongation factor Ts		Down Regulated
pinQ	946088	Putative DNA-invertase from lambdoid prophage Qin		Up Regulated
yebR	946086	UPF0067 protein yebR		Down Regulated
skp	944861	Chaperone protein skp		Down Regulated
dcp	946084	Peptidyl-dipeptidase dcp		Ambiguous/Unsorted
fabZ	944888	(3R)-hydroxymyristoyl-[acyl-carrier-protein] dehydratase		Down Regulated
yhfY	947888	Uncharacterized protein yhfY	["Replication recombination and repair", " Carbon compound utilization"]	Temporarily Up Regul
yhfX	947889	Uncharacterized protein yhfX	["Replication recombination and repair", " Carbon compound utilization"]	Up Regulated
lpxD	944882	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acetyltransferase		Down Regulated
map	947882	Methionine aminopeptidase		Ambiguous/Unsorted
DHAR	945743	PTS-dependent dihydroxyacetone kinase operon regulatory protein		Up Regulated
yjiX	949090	Uncharacterized protein yjiX	["Signal transduction mechanisms", " Adaptation to stress", "response to stress"]	Down Regulated
cysG	947880	Siroheme synthase		Down Regulated
umuD	945746	Protein umuD		Up Regulated
minE	945740	Cell division topological specificity factor		Down Regulated
kdsB	945539	3-deoxy-manno-octulosonate cytidyltransferase		Down Regulated
folM	949096	Dihydrofolate reductase folM		Temporarily Up Regul
hupB	949095	DNA-binding protein HU-beta		Ambiguous/Unsorted
rbfA	947685	Ribosome-binding factor A		Down Regulated
ycbC	945546	Uncharacterized protein ycbC	["regulation of cell shape", "peptidoglycan biosynthetic process"]	Ambiguous/Unsorted
infB	947684	Translation initiation factor IF-2		Down Regulated
arnA	947683	Bifunctional polymyxin resistance protein arnA		Up Regulated
mukF	945548	Chromosome partition protein mukF		Down Regulated
nusA	947682	Transcription elongation protein nusA		Down Regulated
smtA	945547	Protein smtA		Down Regulated
uxaB	945542	Altronate oxidoreductase		Up Regulated
ycbB	945541	Uncharacterized protein ycbB	["DNA replication"]	Temporarily Up Regul
rimP	947680	b3170		Down Regulated
yegX	945543	Uncharacterized protein yegX	["translation"]	Up Regulated
nuoL	945540	NADH-quinone oxidoreductase subunit L		Down Regulated
rlmE	947689	b3179		Down Regulated
yhbY	947688	RNA-binding protein yhbY		Down Regulated
truB	947687	tRNA pseudouridine synthase B		Down Regulated
sufD	944878	Protein sufD		Up Regulated
rpsO	947686	30S ribosomal protein S15		Down Regulated
PabA	947873	Para-aminobenzoate synthase glutamine amidotransferase component II		Ambiguous/Unsorted
metQ	944893	D-methionine-binding lipoprotein metQ		Down Regulated
rpsB	947874	30S ribosomal protein S2		Down Regulated
accA	944895	Acetyl-coenzyme A carboxylase carboxyl transferase subunit alpha		Down Regulated
yejH	945529	Uncharacterized protein yejH	[" Building block biosynthesis", "amino acid biosynthetic process"]	Temporarily Down Re
serC	945527	Phosphoserine aminotransferase		Down Regulated
pnp	947672	Polyribonucleotide nucleotidyltransferase		Down Regulated
yhbQ	947671	UPF0213 protein yhbQ		Up Regulated
deaD	947674	Cold-shock DEAD box protein A		Down Regulated
cmk	945535	Cytidylate kinase		Temporarily Down Re
nlpI	947673	Lipoprotein nlpI		Temporarily Down Re
ihfB	945533	Integration host factor subunit beta		Down Regulated
ycal	945531	Uncharacterized protein ycal	[]	Up Regulated
rssA	945725	NTE family protein rssA		Temporarily Down Re
mtr	947675	Tryptophan-specific transport protein		Temporarily Up Regul
yhbW	947677	Uncharacterized protein yhbW	[]	Down Regulated
ymgE	945760	UPF0410 protein ymgE		Up Regulated
clpA	945764	ATP-dependent Clp protease ATP-binding subunit clpA		Temporarily Up Regul
pth	945765	Peptidyl-tRNA hydrolase		Ambiguous/Unsorted
fabD	945766	Malonyl CoA-acyl carrier protein transacylase		Down Regulated

ycgV	945767	Uncharacterized protein ycgV	['Amino acid transport and metabolism', 'Building block biosynthesis']	Up Regulated
trpB	945768	Tryptophan synthase beta chain		Down Regulated
rmlL	945564	Ribosomal RNA large subunit methyltransferase L		Down Regulated
gst	945758	Glutathione S-transferase		Up Regulated
ycbX	945563	Uncharacterized protein ycbX	[]	Temporarily Down Regulated
rmf	945567	Ribosome modulation factor		Temporarily Up Regulated
gph	947895	Phosphoglycolate phosphatase		Down Regulated
rpe	947896	Ribulose-phosphate 3-epimerase		Down Regulated
yhfZ	947897	Uncharacterized protein yhfZ	['Replication recombination and repair', 'Carbon compound utilization', 'DNA replication']	Up Regulated
dadA	945752	D-amino acid dehydrogenase small subunit		Temporarily Down Regulated
sufB	945753	Protein sufB		Temporarily Up Regulated
mukB	945549	Chromosome partition protein mukB		Down Regulated
ldcA	945756	Muramoyltetrapeptide carboxypeptidase		Temporarily Down Regulated
treA	945757	Periplasmic trehalase; Putative periplasmic trehalase		Up Regulated
dam	947893	DNA adenine methylase		Down Regulated
trpS	947894	Tryptophanyl-tRNA synthetase		Down Regulated
ompF	945554	Outer membrane protein F		Down Regulated
dhaM	945749	PTS-dependent dihydroxyacetone kinase, phosphotransferase subunit dhaM		Down Regulated
dhaL	945748	PTS-dependent dihydroxyacetone kinase, ADP-binding subunit dhaL		Down Regulated
glmM	947692	Phosphoglucosamine mutase		Down Regulated
aspC	945553	Aspartate aminotransferase		Down Regulated
folP	947691	Dihydropteroate synthase		Down Regulated
ycbW	945552	Uncharacterized protein ycbW	['Nucleotide transport and metabolism', 'Building block biosynthesis']	Ambiguous/Unsorted
dhaK	945747	PTS-dependent dihydroxyacetone kinase, dihydroxyacetone-binding subunit dhaK		Down Regulated
dacB	947693	D-alanyl-D-alanine carboxypeptidase dacB		Down Regulated
ybaN	945558	Inner membrane protein ybaN		Down Regulated
greA	947696	Transcription elongation factor; Transcription elongation factor greA		Down Regulated
yhdJ	947695	Uncharacterized adenine-specific methylase yhdJ		Up Regulated
yhbE	947699	Uncharacterized inner membrane transporter yhbE	['Type of regulation']	Down Regulated
ycbL	945551	Uncharacterized protein ycbL	[]	Temporarily Down Regulated
mukE	945550	Chromosome partition protein mukE		Down Regulated
pyrC	945787	Dihydroorotate		Down Regulated
yiiM	945789	Uncharacterized protein yiiM	[]	Up Regulated
ychA	945784	Protein sirB1		Down Regulated
yeeO	946506	Uncharacterized transporter yeeO	[]	Temporarily Up Regulated
hisF	946516	Imidazole glycerol phosphate synthase subunit hisF		Down Regulated
agaA	947646	ECED1_3799; EC55989_3555; E2348C_3421; ECUMN_3619; ECIAI1_3285; ECDH10B_3308; ECIAI39_3636; b3135; ECS88_3523		Ambiguous/Unsorted
garP	947642	Probable galactarate transporter		Temporarily Up Regulated
yeeR	946512	Inner membrane protein yeeR		Down Regulated
dmsC	945502	Anaerobic dimethyl sulfoxide reductase chain C		Up Regulated
rihA	945503	Pyrimidine-specific ribonucleoside hydrolase rihA		Down Regulated
cydC	945504	ATP-binding/permease protein cydC		Temporarily Up Regulated
grxB	946926	Glutaredoxin-2		Temporarily Up Regulated
yfiH	947089	UPF0124 protein yfiH		Down Regulated
hemA	945777	Glutamyl-tRNA reductase		Temporarily Down Regulated
ycgM	946115	Uncharacterized protein ycgM	[]	Ambiguous/Unsorted
aroF	947084	Phospho-2-dehydro-3-deoxyheptonate aldolase, Tyr-sensitive		Down Regulated
lolB	945775	Outer-membrane lipoprotein lolB		Down Regulated
ispE	945774	4-diphosphocytidyl-2-C-methyl-D-erythritol kinase		Down Regulated
barnD	947086	UPF0169 lipoprotein yfiO		Down Regulated
agg	945773	Glucose-1-phosphatase		Up Regulated
prs	945772	Ribose-phosphate pyrophosphokinase		Down Regulated
riuD	947087	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase D		Ambiguous/Unsorted
cysB	945771	HTH-type transcriptional regulator cysB		Ambiguous/Unsorted
ychM	945770	Putative sulfate transporter ychM		Ambiguous/Unsorted
agaR	947636	Putative aga operon transcriptional repressor		Up Regulated
yhaV	947638	Uncharacterized protein yhaV		Up Regulated
cbl	946502	HTH-type transcriptional regulator cbl		Down Regulated
nac	946501	Nitrogen assimilation regulatory protein nac		Down Regulated
efeB	946500	Peroxidase ycdB		Down Regulated
pheA	947081	P-protein		Down Regulated
pheL	947080	Phe operon leader peptide		Up Regulated
yfeZ	946918	Inner membrane protein yfeZ		Down Regulated
uxuA	947082	Mannonate dehydratase		Temporarily Up Regulated
ypeA	946917	Acetyltransferase ypeA		Down Regulated

bisC	946915	Biotin sulfoxide reductase		Down Regulated
yfeX	946913	Uncharacterized protein yfeX	['Building block biosynthesis']	Temporarily Down Regulated
pflA	945517	Pyruvate formate-lyase 1-activating enzyme		Temporarily Up Regulated
ypjD	947098	Inner membrane protein ypjD		Down Regulated
trpC	945519	Tryptophan biosynthesis protein trpCF		Down Regulated
rspB	946127	Starvation-sensing protein rspB		Up Regulated
rplS	947096	50S ribosomal protein L19		Down Regulated
sufC	946128	Probable ATP-dependent transporter sufC		Temporarily Up Regulated
trmD	947099	tRNA (guanine-N(1)-)methyltransferase		Down Regulated
ydhK	946528	Uncharacterized transporter ydhK	['Type of regulation']	Temporarily Down Regulated
sbcB	946529	Exodeoxyribonuclease I		Temporarily Down Regulated
hisD	946531	Histidinol dehydrogenase		Temporarily Up Regulated
yraL	947664	UPF0011 protein yraL		Ambiguous/Unsorted
rsml	947664	UPF0011 protein yraL		Ambiguous/Unsorted
yadE	946536	Uncharacterized protein yadE	['Cell wall membrane envelope biogenesis', 'lipopolysaccharide biosynthetic process']	Up Regulated
yraQ	947668	UPF0718 protein yraQ		Up Regulated
yajO	946903	Uncharacterized oxidoreductase yajO	[]	Temporarily Up Regulated
ycaK	945520	Uncharacterized NAD(P)H oxidoreductase ycaK	['amino acid transport']	Up Regulated
yajG	945521	Uncharacterized lipoprotein yajG	['Posttranslational modification protein turnover chaperones', 'Electrochemical potential driven transporters']	Down Regulated
yraN	947662	UPF0102 protein yraN		Down Regulated
yraM	947663	Uncharacterized protein yraM	['DNA replication']	Down Regulated
ivy	946530	Inhibitor of vertebrate lysozyme		Temporarily Up Regulated
ycaP	945525	UPF0702 transmembrane protein ycaP		Ambiguous/Unsorted
hcr	947660	NADH oxidoreductase hcr		Up Regulated
diaA	947661	DnaA initiator-associating protein diaA		Down Regulated
rsxC	946137	Electron transport complex protein rnfC		Down Regulated
rhmT	945796	Inner membrane transport protein yfaV		Ambiguous/Unsorted
yfaV	945796	Inner membrane transport protein yfaV		Ambiguous/Unsorted
yafS	944903	Uncharacterized protein yafS	['DNA replication']	Down Regulated
serS	945506	Seryl-tRNA synthetase		Temporarily Down Regulated
rarA	945505	Replication-associated recombination protein A		Down Regulated
ychN	945794	Protein ychN		Temporarily Up Regulated
dkgB	944901	2,5-diketo-D-gluconic acid reductase B		Up Regulated
yafJ	944906	Putative glutamine amidotransferase yafJ		Ambiguous/Unsorted
queA	944905	S-adenosylmethionine:tRNA ribosyltransferase-isomerase		Down Regulated
cobU	946519	Bifunctional adenosylcobalamin biosynthesis protein cobU		Up Regulated
ynfD	946133	Uncharacterized protein ynfD	['Energy production and conversion', 'Electrochemical potential driven transporters', 'response to stress']	Up Regulated
rsxD	946134	Electron transport complex protein rnfD		Down Regulated
chaB	945792	Cation transport regulator chaB		Temporarily Up Regulated
chaA	945790	Calcium/proton antiporter		Down Regulated
poxB	946132	Pyruvate dehydrogenase [cytochrome]		Up Regulated
mreC	947655	Rod shape-determining protein mreC		Down Regulated
hisA	946521	1-(5-phosphoribosyl)-5-[(5-phosphoribosylamino)methylideneamino] imidazole-4-carboxamide isomerase		Down Regulated
cobS	946520	Cobalamin synthase		Temporarily Up Regulated
yraJ	947656	Uncharacterized outer membrane usher protein yraJ	['Amino acid transport and metabolism', 'Coenzyme transport and metabolism', 'Central intermediary metabolism', 'translation']	Up Regulated
yeeE	946526	UPF0394 inner membrane protein yeeE		Down Regulated
yraH	947658	Uncharacterized fimbrial-like protein yraH	[]	Up Regulated
hslJ	946525	Heat shock protein hslJ		Temporarily Up Regulated
yafK	944910	Uncharacterized protein yafK	[]	Temporarily Down Regulated
ycaD	945515	Uncharacterized MFS-type transporter ycaD	['translation']	Temporarily Up Regulated
yhgE	947651	Uncharacterized protein yhgE	[]	Temporarily Up Regulated
focA	945513	Type-1 fimbrial protein, C chain; Probable formate transporter 1		Temporarily Down Regulated
hisC	946551	Histidinol-phosphate aminotransferase		Down Regulated
hisB	946552	Histidine biosynthesis bifunctional protein hisB		Down Regulated
mutL	948691	DNA mismatch repair protein mutL		Temporarily Down Regulated
yjeT	948696	Uncharacterized protein yjeT	['Posttranslational modification protein turnover chaperones', 'purine nucleotide biosynthetic process']	Temporarily Down Regulated
rplJ	948490	50S ribosomal protein L10		Down Regulated
hflK	948698	Protein hflK		Down Regulated
yifC	948699	Uncharacterized protein yifC	['electron transport', 'metabolic process']	Up Regulated
exuT	947601	Hexuronate transporter		Up Regulated
rplE	947800	50S ribosomal protein L5		Down Regulated
rpsN	947801	30S ribosomal protein S14		Down Regulated
rpsH	947802	30S ribosomal protein S8		Down Regulated
umuC	946359	Protein umuC		Up Regulated
rplF	947803	50S ribosomal protein L6		Down Regulated

ptrB	946358	Protease 2		Ambiguous/Unsorted
yoaB	946357	UPF0076 protein yoaB		Down Regulated
pphA	946356	Serine/threonine-protein phosphatase 1		Up Regulated
cdh	948410	CDP-diacylglycerol pyrophosphatase		Temporarily Down Regulated
pdxJ	947039	Pyridoxine 5'-phosphate synthase		Temporarily Down Regulated
pdxA	944919	4-hydroxythreonine-4-phosphate dehydrogenase		Down Regulated
cyoD	944918	Cytochrome o ubiquinol oxidase protein cyoD		Down Regulated
yebW	946354	Uncharacterized protein yebW	□	Up Regulated
queC	947034	Queuosine biosynthesis protein queC		Up Regulated
pfkA	948412	6-phosphofructokinase; 6-phosphofructokinase isozyme 1		Down Regulated
fieF	948413	Ferrous-iron efflux pump fieF		Temporarily Down Regulated
fpr	948414	Ferrodoxin-NADP reductase		Temporarily Down Regulated
uspD	948415	Universal stress protein D		Temporarily Up Regulated
yiiS	948416	UPF0381 protein yiiS		Temporarily Up Regulated
hemE	948497	Uroporphyrinogen decarboxylase		Down Regulated
yebO	946350	Uncharacterized protein yebO	□	Down Regulated
yiiR	948417	Uncharacterized protein yiiR	["Amino acid transport and metabolism", "Building block biosynthesis"]	Up Regulated
hupA	948499	DNA-binding protein HU-alpha		Down Regulated
menA	948418	1,4-dihydroxy-2-naphthoate octaprenyltransferase		Down Regulated
nudC	948498	NADH pyrophosphatase		Ambiguous/Unsorted
yafQ	944911	Uncharacterized protein yafQ		Up Regulated
flu	946540	Antigen 43		Down Regulated
frdC	948680	Fumarate reductase subunit C		Temporarily Up Regulated
zapA	947404	Cell division protein zapA		Temporarily Up Regulated
yeeX	946541	UPF0265 protein yeeX		Ambiguous/Unsorted
hfq	948689	Protein hfq		Down Regulated
sbmC	946546	DNA gyrase inhibitory protein		Temporarily Up Regulated
hisL	946547	His operon leader peptide		Ambiguous/Unsorted
hflX	948688	GTP-binding protein hflX		Down Regulated
hisG	946549	ATP phosphoribosyltransferase		Down Regulated
hisH	946544	Imidazole glycerol phosphate synthase subunit hisH		Down Regulated
yeeA	946545	Inner membrane protein yeeA		Up Regulated
ygbJ	947200	Uncharacterized oxidoreductase ygbJ	□	Up Regulated
rpmI	946349	50S ribosomal protein L35		Down Regulated
rsmF	946348	Ribosomal RNA small subunit methyltransferase F		Temporarily Down Regulated
rplL	948489	50S ribosomal protein L7/L12		Down Regulated
yeeD	946539	UPF0033 protein yeeD		Temporarily Up Regulated
dsbB	946344	Disulfide bond formation protein B		Down Regulated
yebV	946347	Uncharacterized protein yebV	["Replication, recombination and repair"]	Up Regulated
yoaH	946346	UPF181 protein yoaH		Down Regulated
yfiC	947047	ECED1_3006; c3099; E2348C_2852; ECIAI1_2689; APEC01_3956; ECS88_2749; ECDH10B_2743; ECUMN_2898; ECIAI39_2780; UTI89_C2897; EC55989_2864; pC15-1a_066; Z3857; b25	Ambiguous/Unsorted	
rplK	948484	50S ribosomal protein L11		Down Regulated
rplA	948483	50S ribosomal protein L1		Down Regulated
rlmA	946340	b1822		Ambiguous/Unsorted
cpxR	948404	Transcriptional regulatory protein cpxR		Down Regulated
yobD	946343	UPF0266 membrane protein yobD		Down Regulated
rhtA	947045	Inner membrane transporter rhtA		Temporarily Up Regulated
ygbM	947207	Protein ygbM		Temporarily Up Regulated
manZ	946342	Mannose permease IID component		Temporarily Up Regulated
rpoB	948488	DNA-directed RNA polymerase subunit beta		Down Regulated
boIA	947043	Protein boIA		Temporarily Up Regulated
dinB	944922	DNA polymerase IV		Ambiguous/Unsorted
nusG	948485	Transcription antitermination protein nusG		Temporarily Down Regulated
yiiM	948406	Protein yiiM		Down Regulated
lepB	947040	Signal peptidase I		Down Regulated
pgk	947414	Phosphoglycerate kinase		Down Regulated
mscS	947416	Small-conductance mechanosensitive channel		Down Regulated
cpsG	946574	Phosphomannomutase		Temporarily Down Regulated
fbaA	947415	Fructose-bisphosphate aldolase class 2		Down Regulated
ugg	946571	UDP-glucose 6-dehydrogenase		Temporarily Up Regulated
argO	947418	Arginine exporter protein argO		Up Regulated
rpoE	947050	RNA polymerase sigma factor; RNA polymerase sigma-E factor		Up Regulated
rplD	947818	50S ribosomal protein L4		Down Regulated
rplC	947817	50S ribosomal protein L3		Down Regulated
yggF	947410	Uncharacterized protein yggF	["Replication, recombination and repair", "Central intermediary metabolism", "DNA recombination"]	Temporarily Down Regulated

yhaH	947617	Inner membrane protein yhaH		Temporarily Up Regul
hsfU	948430	ATP-dependent hsf protease ATP-binding subunit hsfU		Down Regulated
yebC	946379	UPF0082 protein yebC		Down Regulated
ruvC	946378	Crossover junction endodeoxyribonuclease ruvC		Down Regulated
rplB	947820	50S ribosomal protein L2		Down Regulated
metF	948432	Methylenetetrahydrofolate reductase; 5,10-methylenetetrahydrofolate reductase		Temporarily Up Regul
surE	947211	Multifunctional protein surE		Down Regulated
yciS	944936	Inner membrane protein yciS		Down Regulated
ruvB	946371	Holliday junction ATP-dependent DNA helicase ruvB		Temporarily Down Re
truD	947214	tRNA pseudouridine synthase D		Down Regulated
rseB	947054	Sigma-E factor regulatory protein rseB		Temporarily Down Re
rseA	947053	Sigma-E factor negative regulatory protein		Ambiguous/Unsorted
metB	948434	Cystathione gamma-synthase		Down Regulated
znuA	946375	High-affinity zinc uptake system protein znuA		Ambiguous/Unsorted
ydeA	947218	UPF0401 protein yubL; Probable sugar efflux transporter; Sugar efflux transporter		Up Regulated
metJ	948435	Met repressor		Temporarily Up Regul
srmB	947055	ATP-dependent RNA helicase srmB		Down Regulated
rsmA	944939	b0051		Down Regulated
cysN	947219	Sulfate adenyllyltransferase subunit 1		Down Regulated
yciH	947058	Uncharacterized protein yciH	["Translation ribosomal structure and biogenesis", "translation"]	Down Regulated
nagE	945292	PTS system N-acetylglucosamine-specific EIICBA component		Up Regulated
ycfQ	947425	Uncharacterized HTH-type transcriptional regulator ycfQ	[]	Up Regulated
FldA	945293	Flavodoxin-1		Down Regulated
rdgB	947429	Nucleoside-triphosphatase; Nucleoside-triphosphatase rdgB		Down Regulated
insE	944952	Transposase insE for insertion sequence IS3A/B/C/D/E/fA/fB; Transposase insE for insertion sequence IS3		Up Regulated
fur	945295	Ferric uptake regulation protein		Ambiguous/Unsorted
entE	947426	Enterobactin synthetase component E		Temporarily Up Regul
ybaO	945091	Uncharacterized HTH-type transcriptional regulator ybaO	[" Metabolism of other compounds"]	Up Regulated
rpmC	947807	50S ribosomal protein L29		Down Regulated
rplP	947806	50S ribosomal protein L16		Down Regulated
rpmJ	947805	50S ribosomal protein L36 2; 50S ribosomal protein L36; 50S ribosomal protein L36 1		Down Regulated
yegH	946566	UPF0053 protein yegH		Ambiguous/Unsorted
rplR	947804	50S ribosomal protein L18		Down Regulated
murR	946568	b2427		Down Regulated
tktA	947420	Transketolase 1		Down Regulated
rplN	947809	50S ribosomal protein L14		Down Regulated
rpsQ	947808	30S ribosomal protein S17		Down Regulated
marA	947613	Multiple antibiotic resistance protein marA		Up Regulated
yqjF	947608	Inner membrane protein yqjF		Up Regulated
eda	946367	KHG/KDPG aldolase		Down Regulated
glpF	948422	Glycerol uptake facilitator protein		Up Regulated
zapB	948420	Cell division protein zapB		Up Regulated
purT	946368	Phosphoribosylglycinamide formyltransferase 2		Down Regulated
rplV	947813	50S ribosomal protein L22		Down Regulated
rpsC	947814	30S ribosomal protein S3		Down Regulated
rpsS	947811	30S ribosomal protein S19		Down Regulated
cysC	947221	Adenylyl-sulfate kinase		Down Regulated
hsfV	948429	ATP-dependent protease hsfV		Down Regulated
eamB	947065	Cysteine/O-acetylsine efflux protein		Temporarily Up Regul
ybgF	947227	Uncharacterized protein ybgF		Down Regulated
cytR	948427	HTH-type transcriptional repressor cytR		Down Regulated
exoX	946361	Exodeoxyribonuclease 10		Down Regulated
selU	947063	tRNA 2-selenouridine synthase		Up Regulated
maa	945096	Maltose O-acetyltransferase		Up Regulated
pagP	946360	Protein crmA		Up Regulated
kgtP	947069	Alpha-ketoglutarate permease		Temporarily Up Regul
yebF	946363	Protein yebF		Up Regulated
adk	945097	Adenylate kinase		Down Regulated
edd	946362	Phosphogluconate dehydratase		Temporarily Down Re
hha	945098	Hemolysin expression-modulating protein		Up Regulated
yfiD	947068	Autonomous glycyl radical cofactor		Temporarily Down Re
insF	944948	Transposase insF for insertion sequence IS3A/B/C/D/E/fA		Up Regulated
ung	947067	Uracil-DNA glycosylase		Down Regulated
htpG	945099	Chaperone protein htpG		Down Regulated
glpK	948423	Glycerol kinase		Up Regulated

yebG	946364	Uncharacterized protein yebG	["Translation ribosomal structure and biogenesis", "Replication recombination and repair"]	Up Regulated
glpX	948424	Fructose-1,6-biphosphatase class 2		Temporarily Up Regul
yfiF	947066	Uncharacterized tRNA/rRNA methyltransferase yfiF	[]	Down Regulated
speA	947432	Biosynthetic arginine decarboxylase; Arginine decarboxylase		Down Regulated
vacJ	945582	Lipoprotein vacJ		Down Regulated
mlaA	945582	Lipoprotein vacJ		Down Regulated
CHIA	947837	Probable bifunctional chitinase/lysozyme		Up Regulated
mpaA	945969	Protein mpaA		Up Regulated
tufA	947838	Elongation factor Tu 2; Elongation factor Tu; Elongation factor Tu 1		Down Regulated
bfr	947839	Bacterioferritin		Up Regulated
cyoA	945080	Ubiquinol oxidase subunit 2		Down Regulated
yfaL	946595	Uncharacterized protein yfaL		Up Regulated
dtpA	947436	Tripeptide permease tppB		Ambiguous/Unsorted
tppB	947436	Tripeptide permease tppB		Ambiguous/Unsorted
cof	945089	HMP-PP phosphatase		Ambiguous/Unsorted
mdIB	945088	Multidrug resistance-like ATP-binding protein mdIB		Temporarily Down Re
glnK	945087	Nitrogen regulatory protein P-II 2		Down Regulated
yijO	948451	Uncharacterized HTH-type transcriptional regulator yijO	[" RNA related", " Type of regulation", " Genetic unit regulated", "regulation of transcription DNA dependent"]	Down Regulated
lon	945085	ATP-dependent protease La		Ambiguous/Unsorted
clpX	945083	ATP-dependent Clp protease ATP-binding subunit clpX		Ambiguous/Unsorted
argC	948455	N-acetyl-gamma-glutamyl-phosphate reductase		Temporarily Down Re
ykgA	944956	UTI89_C0322; ECS88_0301; APEC01_1693; E2348C_0262; c0416; ECIAI39_0385; ECIAI1_0298; ECUMN_0338; b0300; EC55989_0303; Z0376; ECDH10B_0289		Ambiguous/Unsorted
ycfJ	945977	Uncharacterized protein ycfJ	[]	Temporarily Up Regul
argE	948456	Acetylornithine deacetylase		Down Regulated
ydcU	945976	Inner membrane ABC transporter permease protein ydcU		Temporarily Up Regul
rpmG	946318	50S ribosomal protein L33		Down Regulated
ppc	948457	Phosphoenolpyruvate carboxylase		Down Regulated
fusA	947847	Elongation factor G		Down Regulated
yijP	948458	E2348C_4267; ECUMN_4486; ECED1_4660; b3955; ECDH10B_4143; ECIAI1_4163; EC55989_4437; Z5513; ECS88_4410; UTI89_C4546; c4914; ECIAI39_3034		Down Regulated
rpsG	947846	30S ribosomal protein S7		Down Regulated
yeaQ	946311	UPF0410 protein yeaQ		Temporarily Up Regul
yeaY	946312	Uncharacterized lipoprotein yeaY	["Cell wall membrane envelope biogenesis", "metabolic process"]	Up Regulated
yggE	947442	UPF0301 protein yggE		Down Regulated
ompA	945571	Outer membrane protein A		Temporarily Up Regul
cusS	945978	Sensor kinase cusS; Sensor protein		Down Regulated
rplM	947828	50S ribosomal protein L13		Down Regulated
ydbK	946587	Probable pyruvate-flavodoxin oxidoreductase		Up Regulated
tehB	945979	Tellurite resistance protein tehB		Temporarily Down Re
gspB	947826	Protein picoO		Ambiguous/Unsorted
hspQ	945578	Heat shock protein hspQ		Temporarily Up Regul
asmA	946582	Protein asmA		Down Regulated
trmI	947448	tRNA (guanine-N(7)-)methyltransferase		Up Regulated
mgsA	945574	Methylglyoxal synthase		Ambiguous/Unsorted
yggW	947446	Oxygen-independent coproporphyrinogen-III oxidase-like protein yggW		Down Regulated
mutY	947447	A/G-specific adenine glycosylase		Down Regulated
scpA	945576	Protein sbm		Up Regulated
gshB	947445	Glutathione synthetase		Temporarily Down Re
iscU	947002	NifU-like protein		Temporarily Up Regul
LeuC	945076	3-isopropylmalate dehydratase large subunit		Down Regulated
gldA	948440	Glycerol dehydrogenase		Ambiguous/Unsorted
puuC	947003	Gamma-glutamyl-gamma-aminobutyraldehyde dehydrogenase		Down Regulated
ydbC	945980	Putative oxidoreductase ydbC		Ambiguous/Unsorted
hcaR	947000	Hca operon transcriptional activator		Down Regulated
yccS	947001	Inner membrane protein yccS		Down Regulated
puuB	945072	Gamma-glutamylputrescine oxidoreductase		Down Regulated
clpS	948443	ATP-dependent Clp protease adapter protein clpS		Up Regulated
ompX	944967	Outer membrane protein X		Up Regulated
yahN	944968	Uncharacterized membrane protein yahN		Up Regulated
tesB	945074	Acyl-CoA thioesterase 2		Temporarily Up Regul
yahM	944969	Uncharacterized protein yahM	[]	Temporarily Up Regul
emrE	948442	Multidrug transporter emrE		Up Regulated
cyoE	945073	Protoheme IX farnesyltransferase		Down Regulated
ydcA	945986	Uncharacterized protein ydcA	["Energy production and conversion", " Energy production transport", " Macromolecules cellular constituent biosynthesis", "electron transpor"]	Up Regulated
yoaA	946305	Probable ATP-dependent helicase yoaA		Down Regulated
yhcN	947835	Uncharacterized protein yhcN	["Transcription", " Building block biosynthesis", " RNA related", " Type of regulation", "DNA recombination", "transcription", "regulation of gene expression"]	Up Regulated

thiB	946306	Thiamine-binding periplasmic protein		Temporarily Up Regul
hemX	948446	Putative uroporphyrinogen-III C-methyltransferase		Down Regulated
yeaL	946307	Uncharacterized protein yeaL	□	Temporarily Down Re
flgA	946300	Flagella basal body P-ring formation protein flgA		Down Regulated
mipA	946301	MltA-interacting protein		Down Regulated
ydeM	945981	Anaerobic sulfatase-maturing enzyme homolog ydeM		Up Regulated
iscS	947004	Cysteine desulfurase		Ambiguous/Unsorted
yeaE	946302	Uncharacterized protein yeaE		Temporarily Down Re
ydfK	947451	Uncharacterized protein ydfK	□	Up Regulated
yggn	947453	Uncharacterized protein yggn	["Central intermediary metabolism"]	Ambiguous/Unsorted
solA	944983	N-methyl-L-tryptophan oxidase		Down Regulated
flgJ	947456	Peptidoglycan hydrolase flgJ		Down Regulated
betl	944981	HTH-type transcriptional regulator betl		Up Regulated
prpR	944987	Propionate catabolism operon regulatory protein		Up Regulated
frmR	944986	Transcriptional repressor frmR		Down Regulated
ycdX	948477	Putative hydrolase ycdX		Down Regulated
sdaA	946331	L-serine dehydratase 1		Up Regulated
murB	948470	UDP-N-acetylenolpyruvylglucosamine reductase		Down Regulated
manY	946332	Mannose permease IIC component		Temporarily Down Re
yncJ	945990	Uncharacterized protein yncJ	□	Ambiguous/Unsorted
qseE	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Down Regulated
glrK	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Down Regulated
panE	945065	2-dehydropantoate 2-reductase		Up Regulated
yebY	947014	Uncharacterized protein yebY	["translation"]	Down Regulated
nudL	946330	Uncharacterized Nudix hydrolase nudL		Up Regulated
yoaE	946335	UPF0053 inner membrane protein yoaE		Temporarily Down Re
yheU	947863	UPF0270 protein yheU		Temporarily Down Re
trg	945995	Methyl-accepting chemotaxis protein III		Up Regulated
glnB	947016	Nitrogen regulatory protein P-II 1		Ambiguous/Unsorted
xseB	945069	Exodeoxyribonuclease 7 small subunit		Ambiguous/Unsorted
degS	947865	Protease degS		Down Regulated
pepT	946333	Peptidase T		Ambiguous/Unsorted
argD	947864	Succinylornithine transaminase; Acetylornithine/succinyldiaminopimelate aminotransferase		Ambiguous/Unsorted
manX	946334	PTS system mannose-specific EIIB component		Ambiguous/Unsorted
cspC	946339	Cold shock-like protein cspC		Down Regulated
crp	947867	Catabolite gene activator		Temporarily Down Re
rimL	945998	Ribosomal-protein-serine acetyltransferase		Up Regulated
coaA	948479	Pantothenate kinase		Temporarily Down Re
ydcH	945997	Uncharacterized protein ydcH	["Channel type Transporters"]	Temporarily Up Regul
tsgA	947869	Protein tsgA		Ambiguous/Unsorted
yobF	946338	Uncharacterized protein yobF	["RNA related", "Type of regulation", "Adaptation to stress", "transcription", "regulation of transcription DNA dependent"]	Down Regulated
yhdH	947848	Putative quinone oxidoreductase yhdH		Temporarily Up Regul
slyX	947849	Protein slyX		Temporarily Up Regul
yqqA	947462	Uncharacterized protein yqqA	□	Up Regulated
prpB	944990	Methylisocitrate lyase		Up Regulated
torS	945595	Sensor protein torS; Sensor protein		Temporarily Down Re
frmB	944991	S-formylglutathione hydrolase frmB		Temporarily Down Re
cbpM	945597	Chaperone modulatory protein cbpM		Up Regulated
codB	944994	Cytosine permease		Down Regulated
glcC	947466	Glc operon transcriptional activator		Temporarily Up Regul
proY	945050	Proline-specific permease proY		Temporarily Down Re
frmA	944988	S-(hydroxymethyl)glutathione dehydrogenase		Down Regulated
argH	948463	Argininosuccinate lyase		Ambiguous/Unsorted
sthA	948461	Soluble pyridine nucleotide transhydrogenase		Down Regulated
nusB	945054	N utilization substance protein B homolog; N utilization substance protein B		Down Regulated
oxyR	948462	Hydrogen peroxide-inducible genes activator		Temporarily Down Re
glyA	947022	Serine hydroxymethyltransferase		Down Regulated
yphH	947023	Uncharacterized protein yphH	["Carbohydrate transport and metabolism", "Transcription", "carbohydrate metabolic process"]	Ambiguous/Unsorted
murG	946321	UDP-N-acetylglucosamine--N-acetylmuramyl-(pentapeptide) pyrophosphoryl-undecaprenol N-acetylglucosamine transferase		Down Regulated
mdh	947854	Malate dehydrogenase		Ambiguous/Unsorted
ftsW	946322	Cell division protein ftsW		Temporarily Down Re
yajR	945058	Inner membrane transport protein yajR		Up Regulated
ddIB	946324	D-alanine-D-alanine ligase B		Down Regulated
yheO	947851	Uncharacterized protein yheO	["protein folding"]	Down Regulated
yfhR	945059	Uncharacterized protein yfhR	□	Ambiguous/Unsorted

kefG	947857	Glutathione-regulated potassium-efflux system ancillary protein kefG	Up Regulated
yheS	947856	Uncharacterized ABC transporter ATP-binding protein yheS	Temporarily Down Regulated
rnd	946328	Ribonuclease D	Ambiguous/Unsorted